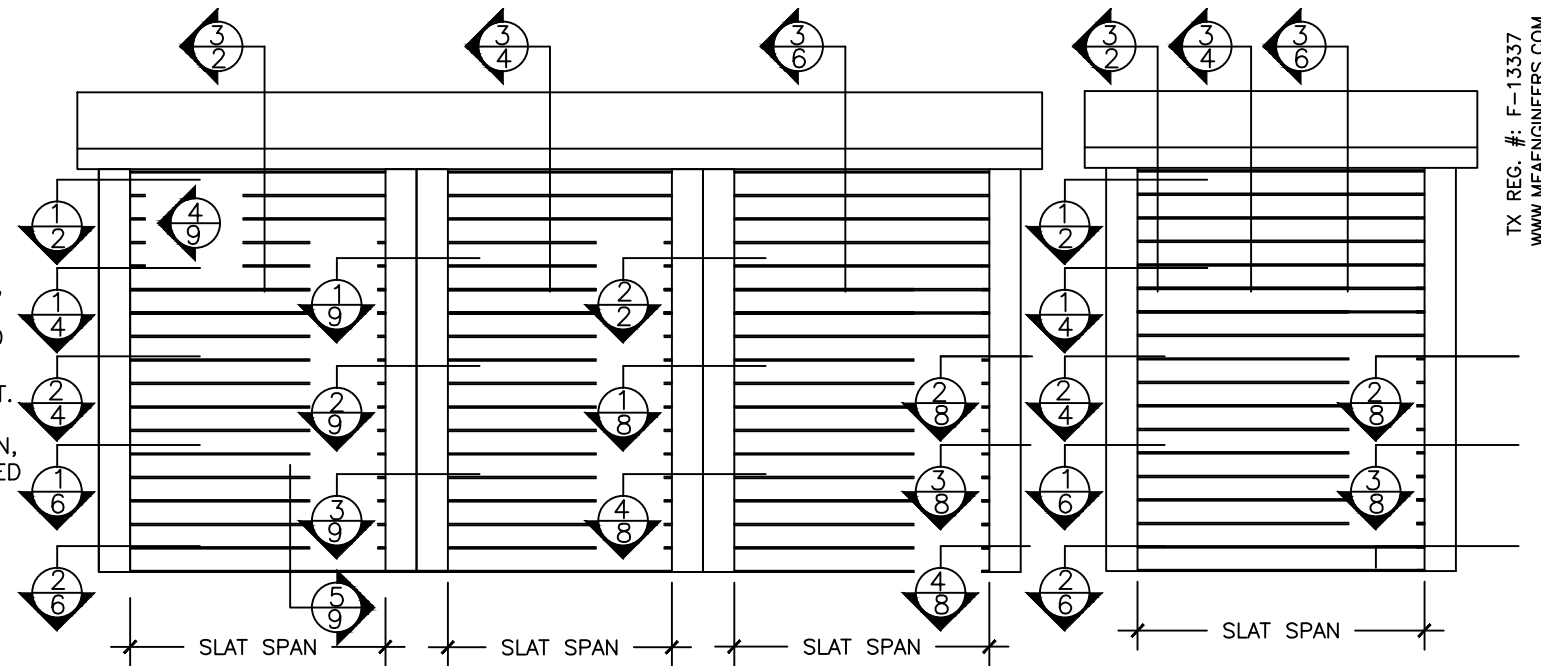


STRUCTURAL NOTES:

- THIS NON POROUS SYSTEM HAS BEEN VERIFIED FOR COMPLIANCE IN ACCORDANCE WITH THE 2018 INTERNATIONAL BUILDING CODE AND 2018 INTERNATIONAL RESIDENTIAL CODE. THE ADEQUACY FOR IMPACT, DEFLECTION AND FATIGUE RESISTANCE HAS BEEN VERIFIED IN ACCORDANCE WITH APPROPRIATE SECTIONS OF THE ABOVE REFERENCED CODE, INCLUDING TESTING STANDARDS: TAS 201,202 AND 203; ASTM E330-02, ASTM E1886-02 AND ASTM E1996-03. SEE LIST OF REPORTS ON SHEET 1 OF 11.
- DESIGN PRESSURE REQUIREMENTS OF A SPECIFIC SITE SHALL BE DETERMINED BY OTHERS IN CONFORMANCE TO APPROPRIATE SECTIONS OF THE FBC FOR A BASIC WIND SPEED (ALLOWABLE STRESS DESIGN) AS REQUIRED BY THE JURISDICTION WHERE THE SYSTEM WILL BE INSTALLED. ULTIMATE DESIGN LOADS (UD) DETERMINED BY ASCE 7-16 SHALL BE REDUCED TO ALLOWABLE STRESS DESIGN LOADS (ASD) BY MULTIPLYING THE UD BY 0.6. TO COMPARE THEM TO THE ASD PRESSURE RATINGS SHOWN ON SHEETS 3, 5, & 7 OF 11. USE OF DIRECTIONALITY FACTOR $K_d=0.85$ IS ALLOWED.
- IMPACT AND FATIGUE RESISTANCE HAS BEEN DETERMINED IN ACCORDANCE WITH THE IBC. LARGE MISSILE AND MISSLE TYPE "D" AS LISTED HEREIN.
- NO 33-1/3% INCREASE IN ALLOWABLE STRESS INCREASE HAS BEEN USED IN THE DESIGN OF THIS PRODUCT.
- THIS PRODUCT EVALUATION DOCUMENT (PED) DETAILED HEREIN IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SPECIFIC SITE. IF SITE CONDITIONS DEVIATE FROM THE CONDITIONS DETAILED HEREIN, A LICENSED ENGINEER OR REGISTERED ARCHITECT SHALL PREPARE SITE SPECIFIC DOCUMENTS TO BE USED IN CONJUNCTION WITH THIS DOCUMENT.
- THE CONTRACTOR AND / OR PERMIT HOLDER IS TO BE RESPONSIBLE FOR THE SELECTION, PURCHASE AND INSTALLATION OF THIS SYSTEM, INCLUDING VERIFYING THE ADEQUACY OF THE EXISTING STRUCTURE TO WITHSTAND THE NEW SUPERIMPOSED LOADS SHOWN BELOW AND THE SOUNDNESS OF THE STRUCTURE WHERE THE SYSTEM IS TO BE ATTACHED TO INSURE PROPER ANCHORAGE.
- SITE SPECIFIC PROJECTS SHALL BE PREPARED BY A TEXAS LICENSED ENGINEER OR ARCHITECT WHO WILL BECOME THE ENGINEER OF RECORD (EOR) FOR THE PROJECT AND WHO WILL BE RESPONSIBLE FOR THE PROPER USE OF THE PED. THE ENGINEER OF RECORD, ACTING AS A DELEGATED ENGINEER TO THE PED ENGINEER SHALL SUBMIT TO THIS ENGINEER THE SITE SPECIFIC DRAWINGS FOR REVIEW.
- THIS PED SHALL BEAR THE DATE AND ORIGINAL SEAL OF THE PROFESSIONAL ENGINEER OF RECORD THAT PREPARED IT REGARDLESS OF ITS AVAILABILITY FROM THE TEXAS DEPARTMENT OF INSURANCE WEBSITE.
- AN OPTIONAL UV AND / OR SOLAR EXTERNAL LAYER MAY BE ADDED ONTO THE SYSTEM.
- LIMITATIONS OF USE:
THE MAXIMUM SIZE SHALL BE SHOWN ON SHEETS 3, 5, & 7 OF 11.
MAXIMUM HEIGHT OF ROLL-UP SHALL BE 30'-0".
- FOR DETERMINING INTERNAL PRESSURE IN THE ABOVE REFERENCED CODES, THIS PRODUCT IS CLASSIFIED AS NON-POROUS WITH A POROSITY OF LESS THAN 10% FOR THE CONDITIONS SHOWN IN THIS PRODUCT EVALUATION DOCUMENT. THIS PRODUCT MUST COMPLETELY COVER AN OPENING IN ALL DIRECTIONS.
- ALL SCREWS TO BE STAINLESS STEEL 304 OR GALVANIZED A307 STEEL.
- ALL BOLTS TO BE ASTM A307, GALVANIZED OR 304 SERIES STAINLESS STEEL.
- SUPPORTBRACKETS AND ANCHORS :
A. ANCHORS INTO THE SUPPORT SUBSTRUCTURE (WALL, CEILINGS, BEAMS AND FLOORS) SHALL BE INSTALLED PER MANUFACTURER'S REQUIREMENTS.
B. THE ANCHOR SPACING SHOWN ON SHEETS 3, 5, & 7 OF 11 INDICATED FOR 1/4" and 3/8" DIAMETERS REFER TO CENTER OF SUPPORTING BRACKETS.
C. ANCHOR MINIMUM EMBEDMENT AND EDGE DISTANCES
- NO EMBEDMENT INTO NON-STRUCTURAL MATERIAL SUCH AS STUCCO, SIDING AND PAVERS SHALL BE INCLUDED AS PART OF THE EMBEDMENT REQUIREMENT.
- STEEL SURFACES TO BE PLACED IN CONTACT WITH ALUMINUM SHALL BE GIVEN ONE COAT OF ZINC CHROMATE PRIMER IN ACCORDANCE WITH FEDERAL SPEC NO.: TTP-645, OR BE GALVANIZED.
- MAXIMUM DESIGN PRESSURE VERSUS PANEL SPAN SHOWN ON SHEETS 3, 5, & 7 OF 11.
- ALL ALUMINUM ALLOYS SHALL BE 6063-T6 OR 6005-T6 U.N.O.
- ANCHORING OR LOADING CONDITIONS OTHER THAN THOSE SHOWN IN THESE DETAILS ARE NOT PART OF THIS APPROVAL.
- MANUFACTURER LABEL SHALL BE PLACED ON A READILY AND VISIBLE LOCATION ON THE ROLL-UP. ONE LABEL SHALL BE PLACED FOR EVERY OPENING. LABEL SHALL READ AS FOLLOWS:
ULTRATEK WORLDWIDE
3801 N WASHINGTON AVE
SARASOTA, FL 34234
TEXAS DEPARTMENT OF INSURANCE NUMBER: SHU-XXX. OPENING NO.: XX
- THIS DOCUMENT IN ITS ENTIRETY WILL BE CONSIDERED INVALID IF IT IS ALTERED BY ANY MEANS OR DOES NOT BEAR THE DATE AND ORIGINAL EMBOSSED SEAL OF THE PROFESSIONAL ENGINEER OF RECORD THAT PREPARED IT.



TYPICAL MULTIPLE UNIT ELEVATION

INTERMEDIATE MULLION REQUIRED FOR INSTALLATION
SCALE 1:20

TYPICAL SINGLE UNIT ELEV.

SINGLE SPAN UNIT INSTALLATION
SCALE 1:20

SLAT SPAN	ALLOWABLE DESIGN PRESSURE
72.0"	+/- 120.0 PSF
92.0"	+/- 108.8 PSF
112.0"	+/- 101.1 PSF
132.0"	+/- 95.1 PSF
152.0"	+/- 90.0 PSF
172.0"	+/- 85.7 PSF
192.0"	+/- 82.0 PSF
204.0"	+/- 80.0 PSF
230.0"	+/- 67.8 PSF
244.0"	+/- 62.6 PSF
258.0"	+/- 58.0 PSF
272.0"	+/- 54.0 PSF
286.0"	+/- 50.5 PSF
288.0"	+/- 50.0 PSF

LIST OF REPORTS

EVALUATION BASED ON:
BLACKWATER TESTING INC.
LAB NO.: BT-UTW-17-001
DATED 8-16-17
TAS 201, TAS 203 - LARGE MISSILE IMPACT RESISTANCE & CYCLIC LOADING PERFORMANCE
TAS 202 - UNIFORM STATIC LOADS
LAB NO.: BTW-UTW-17-001
DATED 8-16-17
ASTM E330-02 - UNIFORM STATIC LOADS
ASTM E1886-02 & ASTM E1996-03 - LARGE MISSILE TYPE "D" IMPACT RESISTANCE & CYCLIC LOADING PERFORMANCE

SUBSTRUCTURE	EMBEDMENT	EDGE DISTANCE
HOLLOW BLOCK	1-1/4 INCH	12 D OR PER MANUF.
GROUT FILLED OR KSI CONCRETE	1-3/4 INCH	12 D OR PER MANUF.
4 KSI CONCRETE OR 2 KSI CONCRETE	1-3/4 INCH	12 D OR PER MANUF.
WOOD OR TIMBER	8 D	3/4 INCH

TX REG. #: F-13337
WWW.MEAENGINEERS.COM

MEAE
ENGINEERS, INC.
2352 Appaloosa Circle
Sarasota, Florida 34240
(941) 922-3854

REV.	DESCRIPTION
1	XX/XX/XX - RESERVED.

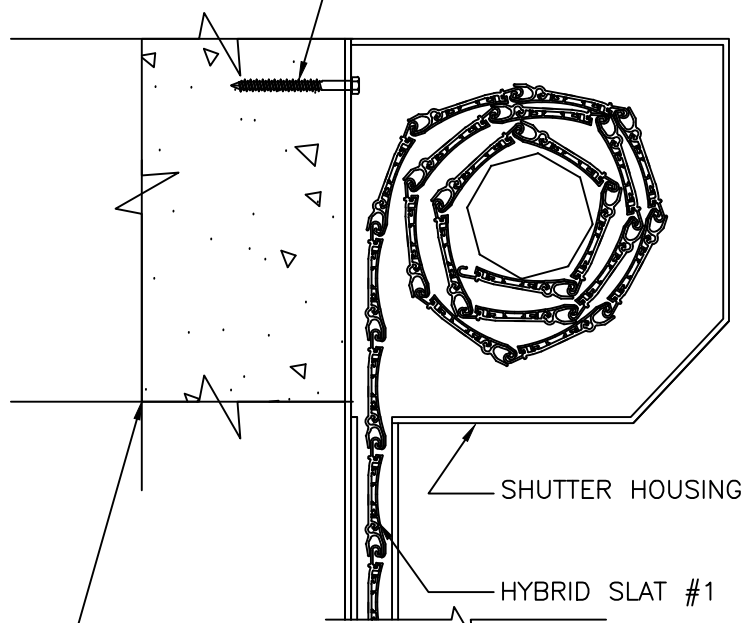
Project Name: **ULTRATEK WORLDWIDE**
3801 N. Washington Blvd.
Sarasota, FL 34234
Phone: (941) 351-6700
info@ultratek.com

Department of Insurance Description: **GREENTEK HYBRID ROLL-UP SHUTTER SYSTEM**

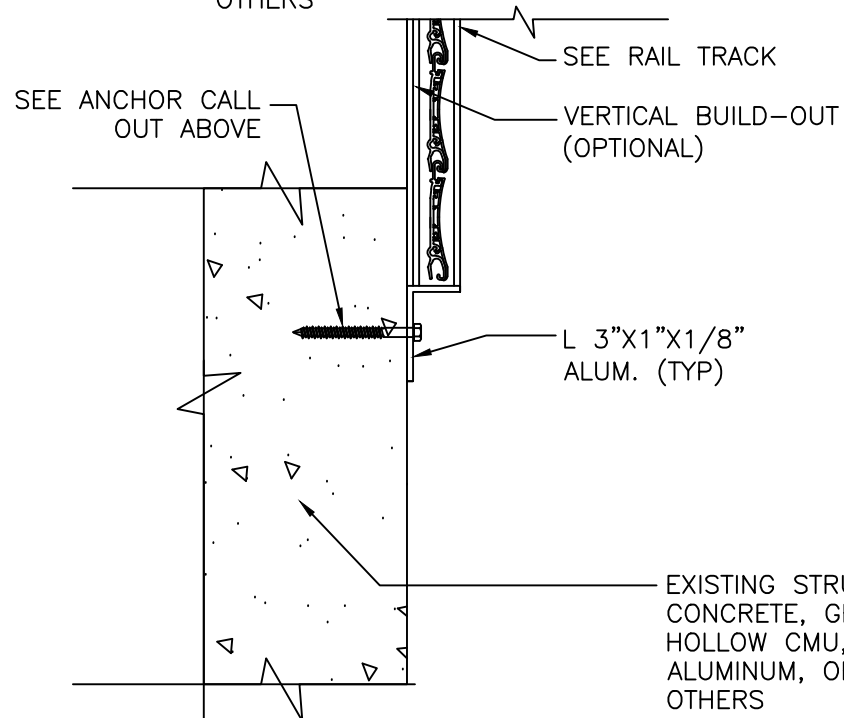
Drawn: JK
Project #: 21-14
Scale: NOTED
Date: 3/4/21
Sheet No.: 1 of 11

John H. Kampmann Jr., PE
TX License #: 108168
DATE:

MANUFACTURER (IF APPLICABLE), SUBSTRATE STRENGTH/THICKNESS, EMBEDMENT/THREAD PENETRATION, AND EDGE DISTANCE PER TABLES ON SHEETS 3, 5, 7, OF 11:
 IF CONCRETE: 1/4"Ø TAPCON @ 12" O.C.
 IF GROUT FILLED OR HOLLOW CMU: 5/16"Ø TAPCON @ 12" O.C.
 IF WOOD: 1/4"Ø LAG SCREW @ 12" O.C.
 IF ALUMINUM OR STEEL: #14 SMS @ 12" O.C.

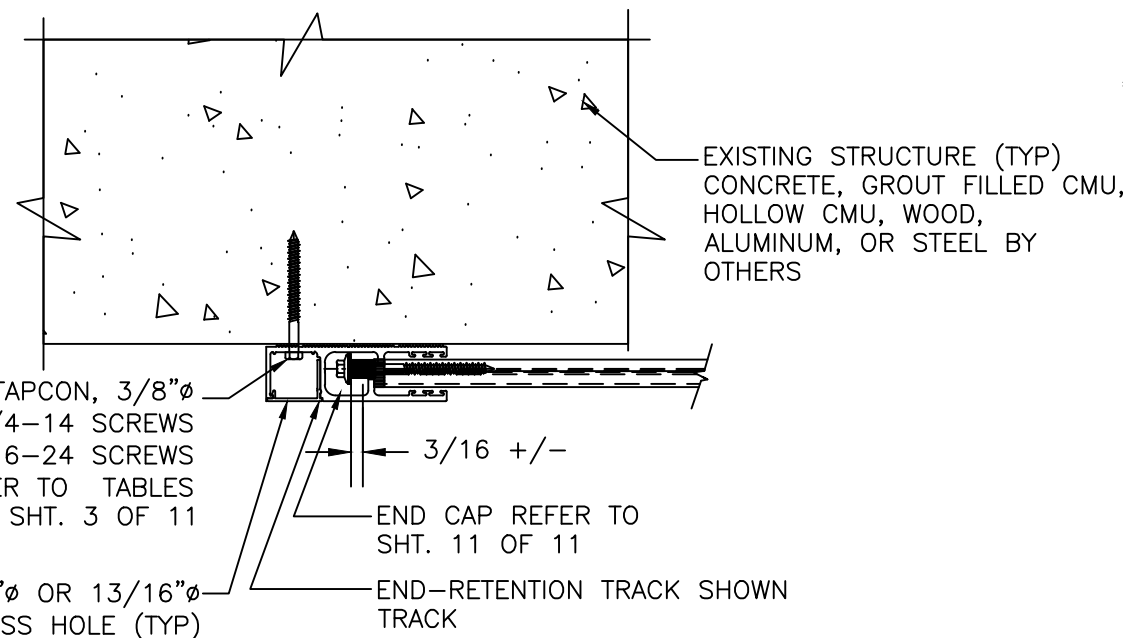


EXISTING STRUCTURE (TYP)
 CONCRETE, GROUT FILLED CMU,
 HOLLOW CMU, WOOD,
 ALUMINUM, OR STEEL BY
 OTHERS

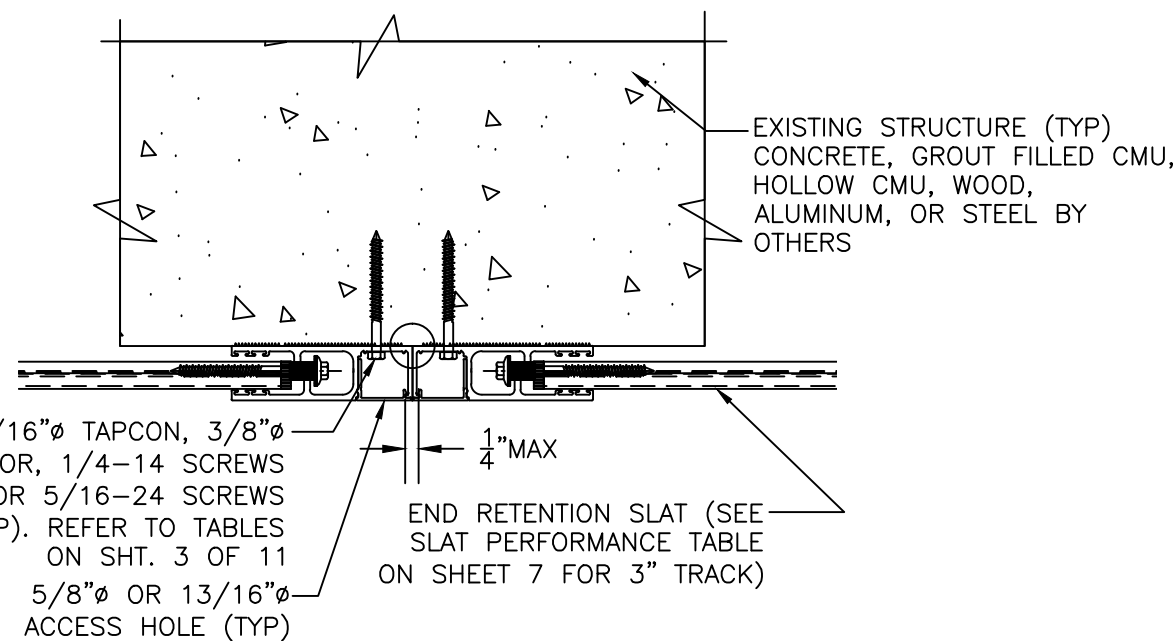


EXISTING STRUCTURE (TYP)
 CONCRETE, GROUT FILLED CMU,
 HOLLOW CMU, WOOD,
 ALUMINUM, OR STEEL BY
 OTHERS

DIRECT MOUNT
 3-1/4" END RETENTION TRACK
 WALL MOUNT INSTALLATION
 SCALE 3"=1'-0"



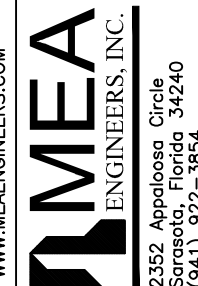
END RETENTION
 DIRECT MOUNT INSTALLATION
 SCALE 3"=1'-0"



END RETENTION TRACK
 WALL MOUNT INSTALLATION
 SCALE 3"=1'-0"

John H. Kampmann Jr., PE
 TX License #: 108168
 DATE:

TX REG. #: F-13337
 WWW.MEAENGINEERS.COM



REV.	DESCRIPTION
1	XX/XX/XX - RESERVED.

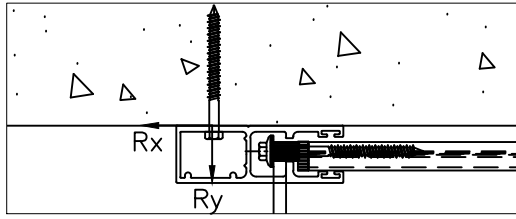
ULTRATEK WORLDWIDE
 3801 N. Washington Blvd.
 Sarasota, FL 34234
 Phone: (941) 351-6700
 info@ultratek.com

Project Name:

GREENTEK HYBRID
 ROLL-UP SHUTTER SYSTEM

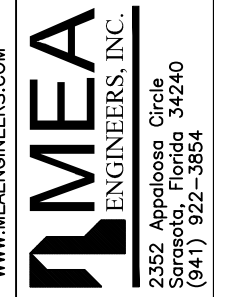
Drawn:	JK
Project #:	21-14
Scale:	NOTED
Date:	3/4/21
Sheet No.:	

TEXAS DEPARTMENT OF INSURANCE



(WALL MOUNT)

SLAT SPAN	DESIGN PRESSURE	Rx	Ry	MAXIMUM SPACING (O.C.)																	
				1/4" ELCO ULTRACON TO 2700 PSI MIN. CONCRETE; 1.75" MIN. EMBEDMENT; 2.5" MIN. EDGE DISTANCE	1/4" SS ITW TAPCON TO 3192 PSI MIN. CONCRETE; 1.75" MIN. EMBEDMENT; 2.5" MIN. EDGE DISTANCE	5/16" ELCO ULTRACON TO 3500 PSI MIN. CONCRETE; 2" MIN. EMBEDMENT; 3.125" MIN. EDGE DISTANCE	5/16" ITW TAPCON		TO 2899 PSI MIN. CONCRETE; 2.25" MIN. EMBEDMENT; 3.125" MIN. EDGE DISTANCE	TO GROUT-FILLED CONCRETE BLOCK; 2.25" MIN. EMBEDMENT; 4" MIN. EDGE DISTANCE	TO HOLLOW CONCRETE BLOCK; 1.75" MIN. EMBEDMENT; 4" MIN. EDGE DISTANCE	1/4" POWERS POWER-BOLT TO 3000 PSI MIN. CONCRETE; 2.5" MIN. EMBEDMENT; 3" MIN. EDGE DISTANCE	1/4" ALL-POINTS SOLID-SET		1/4" LAG SCREW TO G=0.55 MIN WOOD; 1.5" MIN. EMBEDMENT; 0.75" MIN. EDGE DISTANCE	5/16" LAG SCREW TO G=0.42 MIN WOOD; 2" MIN. EMBEDMENT; 0.75" MIN. EDGE DISTANCE	#14 WOOD SCREW TO G=0.55 MIN WOOD; 1.5" MIN. EMBEDMENT; 0.75" MIN. EDGE DISTANCE	#14 410 SS SMS W/ FULL THREAD PENETRATION OR 1/4-20 410 SS THRU-BOLT TO 0.125" MIN. G063-T6 ALUM OR A36 STEEL; 0.5" MIN. EDGE DISTANCE	5/16" 410 SS SMS W/ FULL THREAD OR 5/16-18 410 SS THRU-BOLT TO 0.25" MIN. G063-T6 ALUM OR A36 STEEL; 0.625" MIN. EDGE DISTANCE	3/8" POWERS WEDGE BOLT TO 3000 PSI MIN. CONCRETE; 3.5" MIN. EMBEDMENT; 4.5" MIN. EDGE DISTANCE	3/8" ELCO CONFLX TO 1819 PSI MIN. CONCRETE; 3.5" MIN. EMBEDMENT; 3.75" MIN. EDGE DISTANCE
72"	+/- 50 PSF	678.2 LB/FT	150.0 LB/FT	6.5"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	5.7"	3.0"	2.5"	3.1"	6.0"	6.0"	6.0"	6.0"	6.0"	
	+/- 60 PSF	842.2 LB/FT	180.0 LB/FT	5.3"	5.7"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	4.7"	2.4"	2.0"	2.5"	6.0"	6.0"	6.0"	6.0"	6.0"	
	+/- 70 PSF	1004.9 LB/FT	210.0 LB/FT	4.4"	4.8"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	4.7"	2.0"		2.1"	5.4"	6.0"	6.0"	6.0"	6.0"	
	+/- 80 PSF	1166.2 LB/FT	240.0 LB/FT	3.8"	4.1"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	4.4"	2.0"			4.7"	5.5"	6.0"	6.0"	6.0"	
	+/- 90 PSF	1325.9 LB/FT	270.0 LB/FT	3.4"	3.6"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	4.8"	2.0"			4.1"	4.9"	6.0"	6.0"	6.0"	
	+/- 100 PSF	1484.2 LB/FT	300.0 LB/FT	3.0"	3.2"	5.7"	5.6"	5.4"	5.4"	5.4"	5.4"	4.3"	2.7"			3.7"	4.4"	6.0"	6.0"	6.0"	
	+/- 110 PSF	1640.8 LB/FT	330.0 LB/FT	2.7"	2.9"	5.2"	5.1"	4.9"	4.9"	4.9"	4.9"	3.9"	2.4"			3.3"	4.0"	6.0"	6.0"	6.0"	
112"	+/- 45 PSF	1405.0 LB/FT	210.0 LB/FT	3.3"	3.6"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	2.9"			4.3"	5.3"	6.0"	6.0"	6.0"		
	+/- 50 PSF	1567.1 LB/FT	233.3 LB/FT	3.0"	3.2"	5.7"	5.6"	5.3"	5.3"	5.3"	4.3"	2.6"			3.9"	4.8"	6.0"	6.0"	6.0"		
	+/- 55 PSF	1729.0 LB/FT	256.7 LB/FT	2.7"	2.9"	5.1"	5.1"	4.8"	4.8"	4.8"	3.9"	2.4"			3.5"	4.3"	6.0"	6.0"	6.0"		
	+/- 60 PSF	1890.7 LB/FT	280.0 LB/FT	2.5"	2.7"	4.7"	4.7"	4.4"	4.4"	4.4"	3.1"	2.2"			3.2"	4.0"	6.0"	6.0"	6.0"		
	+/- 65 PSF	2052.0 LB/FT	303.3 LB/FT	2.3"	2.4"	4.3"	4.3"	4.1"	4.1"	4.1"	2.5"	2.0"			2.9"	3.7"	6.0"	6.0"	6.0"		
	+/- 70 PSF	2213.1 LB/FT	326.7 LB/FT	2.1"	2.3"	4.0"	4.0"	3.8"	3.8"	3.8"	2.3"	2.7"			2.7"	3.4"	6.0"	6.0"	6.0"		
	+/- 75 PSF	2373.8 LB/FT	350.0 LB/FT	2.1"	2.1"	4"	3.7"	3.5"	3.5"	3.5"	2.2"	2.8"			2.6"	3.2"	6.0"	6.0"	6.0"		
152"	+/- 45 PSF	2292.4 LB/FT	285.0 LB/FT	2.1"	2.2"	4.0"	3.9"	3.7"	3.7"	2.3"	2.3"			2.4"	3.0"	6.0"	6.0"	6.0"	6.0"		
	+/- 50 PSF	2549.3 LB/FT	316.7 LB/FT	2.0"	2.0"	3.6"	3.5"	3.3"	3.3"	2.1"	2.7"			2.5"	3.2"	6.0"	6.0"	6.0"	6.0"		
	+/- 55 PSF	2805.7 LB/FT	348.3 LB/FT	2.1"	2.2"	3.2"	3.2"	3.0"	3.0"	2.5"	2.1"			2.3"	2.9"	6.0"	6.0"	6.0"	6.0"		
	+/- 60 PSF	3061.8 LB/FT	380.0 LB/FT	2.1"	2.2"	3.0"	2.9"	2.8"	2.8"	2.3"	2.8"			2.1"	2.6"	5.5"	6.0"	6.0"	6.0"		
	+/- 65 PSF	3317.3 LB/FT	411.7 LB/FT	2.1"	2.2"	2.7"	2.7"	2.6"	2.6"	2.1"	2.1"			2.4"	2.4"	5.1"	5.6"	6.0"	6.0"		
	+/- 70 PSF	3572.4 LB/FT	443.3 LB/FT	2.1"	2.2"	2.5"	2.5"	2.4"	2.4"	2.4"	2.4"			2.3"	2.3"	4.7"	5.2"	6.0"	6.0"		
	+/- 75 PSF	3827.1 LB/FT	475.0 LB/FT	2.1"	2.2"	2.4"	2.4"	2.2"	2.2"	2.2"	2.2"			2.1"	2.1"	4.4"	4.9"	5.9"	5.9"		
192"	+/- 45 PSF	3284.4 LB/FT	360.0 LB/FT	2.1"	2.2"	2.8"	2.8"	2.6"	2.6"	2.2"	2.2"			2.6"	3.0"	6.0"	6.0"	6.0"	6.0"		
	+/- 50 PSF	3649.1 LB/FT	400.0 LB/FT	2.1"	2.2"	2.5"	2.5"	2.4"	2.4"	2.4"	2.4"			2.3"	2.3"	4.7"	5.2"	6.0"	6.0"		
	+/- 55 PSF	4013.1 LB/FT	440.0 LB/FT	2.1"	2.2"	2.3"	2.3"	2.1"	2.1"	2.1"	2.1"			2.1"	2.1"	4.3"	4.7"	5.7"	5.7"		
	+/- 60 PSF	4376.5 LB/FT	480.0 LB/FT	2.1"	2.2"	2"	2.1"	2.1"	2.1"	2.1"	2.1"			2.1"	2.1"	3.9"	4.3"	5.2"	5.2"		
	+/- 65 PSF	4739.2 LB/FT	520.0 LB/FT	2.1"	2.2"	2.1"	2.1"	2.1"	2.1"	2.1"	2.1"			2.1"	2.1"	3.6"	4.0"	4.8"	4.8"		
	+/- 70 PSF	5101.1 LB/FT	560.0 LB/FT	2.1"	2.2"	2.1"	2.1"	2.1"	2.1"	2.1"	2.1"			2.1"	2.1"	3.3"	3.7"	4.5"	4.5"		
	+/- 75 PSF	5462.4 LB/FT	600.0 LB/FT	2.1"	2.2"	2.1"	2.1"	2.1"	2.1"	2.1"	2.1"			2.1"	2.1"	3.1"	3.5"	4.2"	4.2"		
204"	+/- 45 PSF	3602.0 LB/FT	382.5 LB/FT	2.1"	2.2"	2.6"	2.5"	2.4"	2.4"	2.4"	2.4"			2.4"	2.4"	4.8"	5.3"	6.0"	6.0"		
	+/- 50 PSF	4001.3 LB/FT	425.0 LB/FT	2.1"	2.2"	2.3"	2.3"	2.2"	2.2"	2.2"	2.2"			2.1"	2.1"	4.3"	4.7"	5.7"	5.7"		
	+/- 55 PSF	4399.9 LB/FT	467.5 LB/FT	2.1"	2.2"	2.1"	2.1"	2.1"	2.1"	2.1"	2.1"			2.1"	2.1"	3.9"	4.3"	5.2"	5.2"		
	+/- 60 PSF	4797.8 LB/FT	510.0 LB/FT	2.1"	2.2"	2.1"	2.1"	2.1"	2.1"	2.1"	2.1"			2.1"	2.1"	3.6"	3.9"	4.8"	4.8"		
	+/- 65 PSF	5194.9 LB/FT	552.5 LB/FT	2.1"	2.2"	2.1"	2.1"	2.1"	2.1"	2.1"	2.1"			2.1"	2.1"	3.3"	3.6"	4.4"	4.4"		
	+/- 70 PSF	5591.1 LB/FT	595.0 LB/FT	2.1"	2.2"	2.1"	2.1"	2.1"	2.1"	2.1"	2.1"			2.1"	2.1"	3.1"	3.4"	4.1"	4.1"		
	+/- 75 PSF	5986.6 LB/FT	637.5 LB/FT	2.1"	2.2"	2.1"	2.1"	2.1"	2.1"	2.1"	2.1"			2.1"	2.1"	2.9"	3.2"	3.8"	3.8"		
230"	+/- 20 PSF	1918.7 LB/FT	191.7 LB/FT	2.5"	2.7"	4.8"	4.8"	4.5"	4.5"	2.9"	3.7"	3.2"	2.3"		3.5"	4.5"	6.0"	6.0"	6.0"		
	+/- 25 PSF	2400.7 LB/FT	239.6 LB/FT	2.0"	2.2"	3.9"	3.8"	3.6"	3.6"	2.3"	3.0"	2.6"	2.6"		2.8"	3.6"	6.0"	6.0"	6.0"		
	+/- 30 PSF	2882.0 LB/FT	287.5 LB/FT	2.0"	2.2"	3.2"	3.2"	3.0"	3.0"	2.3"	2.5"	2.1"	2.1"		2.3"	3.0"	6.0"	6.0"	6.0"		
	+/- 35 PSF	3362.6 LB/FT	335.4 LB/FT	2.0"	2.2"	2.8"	2.7"	2.6"	2.6"	2.3"	2.1"	2.1"	2.1"		2.6"	3.0"	6.0"	6.0"	6.0"		
	+/- 40 PSF	3842.5 LB/FT	383.3 LB/FT	2.0"	2.2"	2.4"	2.4"	2.3"	2.3"	2.3"	2.1"	2.1"	2.1"		2.6"	3.0"	6.0"	6.0"	6.0"		
	+/- 45 PSF	4321.5 LB/FT	431.3 LB/FT	2.0"	2.2"	2.1"	2.1"	2.0"	2.0"	2.0"	2.0"	2.0"	2.0"		2.3"	3.0"	6.0"	6.0"	6.0"		
	+/- 50 PSF	4799.6 LB/FT	479.2 LB/FT	2.0"	2.2"	2.1"	2.1"	2.0"	2.0"	2.0"	2.0"	2.0"	2.0"		2.3"	3.0"	6.0"	6.0"	6.0"		
272"	+/- 20 PSF	2477.2 LB/FT	226.7 LB/FT	2.1"	2.1"	3.8"	3.8"	3.5"	3.5"	2.3"	2.9"	2.5"	2.5"		2.7"	3.6"	6.0"	6.0"	6.0"		
	+/- 25 PSF	3097.3 LB/FT	283.3 LB/FT	2.1"	2.1"	3.0"	3.0"	2.8"	2.8"	2.3"	2.3"	2.3"	2.3"		2.2"	2.9"	6.0"	6.0"	6.0"		
	+/- 30 PSF	3716.4 LB/FT	340.0 LB/FT	2.1"	2.1"	2.5"	2.5"	2.4"	2.4"	2.3"	2.3"	2.3"	2.3"		2.4"	2.9"	6.0"	6.0"	6.0"		
	+/- 35 PSF	4334.6 LB/FT	396.7 LB/FT	2.1"	2.1"	2.2"	2.1"	2.0"	2.0"	2.3"	2.3"	2.3"	2.3"		2.1"	2.4"	6.0"	6.0"	6.0"		
	+/- 40 PSF	4951.6 LB/FT	453.3 LB/FT	2.1"	2.1"	2.2"	2.1"	2.0"	2.0"	2.3"	2.3"	2.3"	2.3"		2.1"	2.4"	6.0"	6.0"	6.0"		
	+/- 45 PSF	5567.6 LB/FT	510.0 LB/FT	2.1"	2.1"	2.2"	2.1"	2.0"	2.0"	2.3"	2.3"	2.3"	2.3"		2.1"	2.4"	6.0"	6.0"	6.0"		
	+/- 50 PSF	6182.4 LB/FT	566.7 LB/FT	2.1"	2.1"	2.2"	2.1"	2.0"	2.0"	2.3"	2.3"	2.3"	2.3"		2.1"	2.4"	6.0"	6.0"	6.0"		
288"	+/- 20 PSF	2701.4 LB/FT	240.0 LB/FT	2.1"	2.1"	3"	3.5"	3.2"	3.2"	2.1"	2.7"	2.3"	2.3"		2.5"	3.4"	6.0"	6.0"	6.0"		
	+/- 25 PSF	3377.0 LB/FT	300.0 LB/FT	2.1"	2.1"	2.8"	2.8"	2.6"	2.6"	2.1"	2.7"	2.3"	2.3"		2.0"	2.7"	6.0"	6.0"	6.0"		
	+/- 30 PSF	4051.6 LB/FT	360.0 LB/FT	2.1"	2.1"	2.3"	2.3"	2.2"	2.2"	2.1"	2.7"	2.3"	2.3"		2.0"	2.7"	6.0"	6.0"	6.0"		
	+/- 35 PSF	4725.0 LB/FT	420.0 LB/FT	2.1"	2.1"	2.2"	2.2"	2.2"	2.2"	2.1"	2.7"	2.3"	2.3"		2.0"	2.7"	6.0"	6.0"	6.0"		
	+/- 40 PSF	5397.3 LB/FT	480.0 LB/FT	2.1"	2.1"	2.2"	2.2"	2.2"	2.2"	2.1"	2.7"	2.3"	2.3"		2.0"	2.7"	6.0"	6.0"	6.0"		



TX REG. #: F-13337
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REV.	DESCRIPTION
1	XX/XX/XX - RESERVED.

ULTRATEK WORLDWIDE
3801 N. Washington Blvd.
Sarasota, FL 34234
Phone: (941) 351-6700
info@ultratek.com

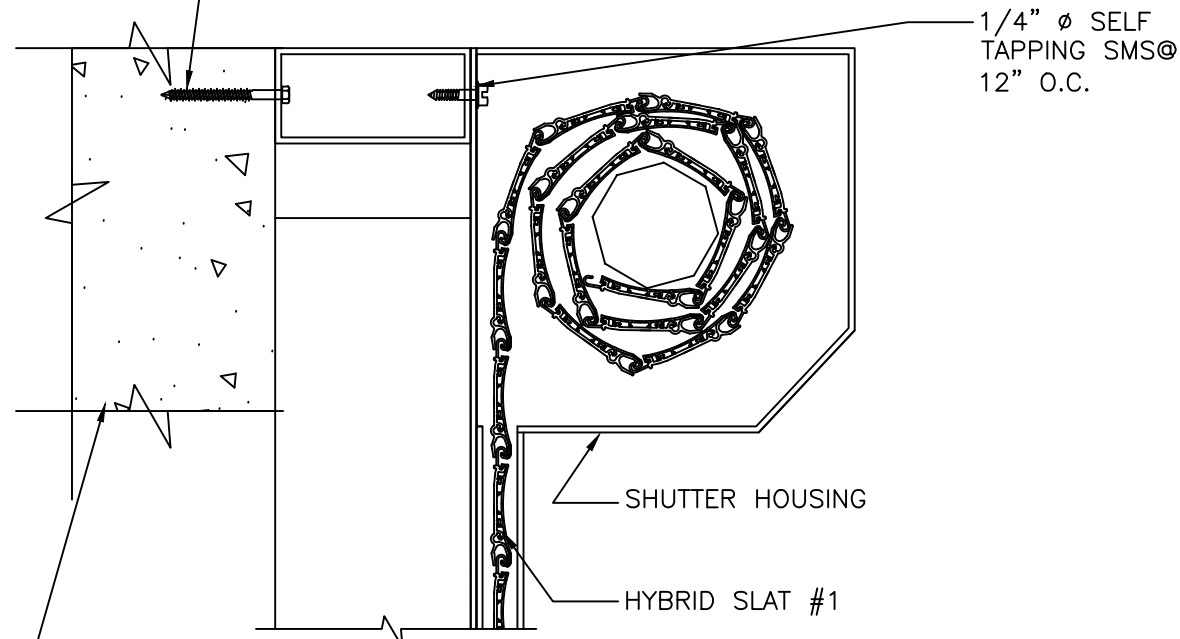
GREENTEK HYBRID
ROLL-UP SHUTTER SYSTEM

Drawn: JK
Project #: 21-14
Scale: NOTED
Date: 3/4/21
Sheet No.:

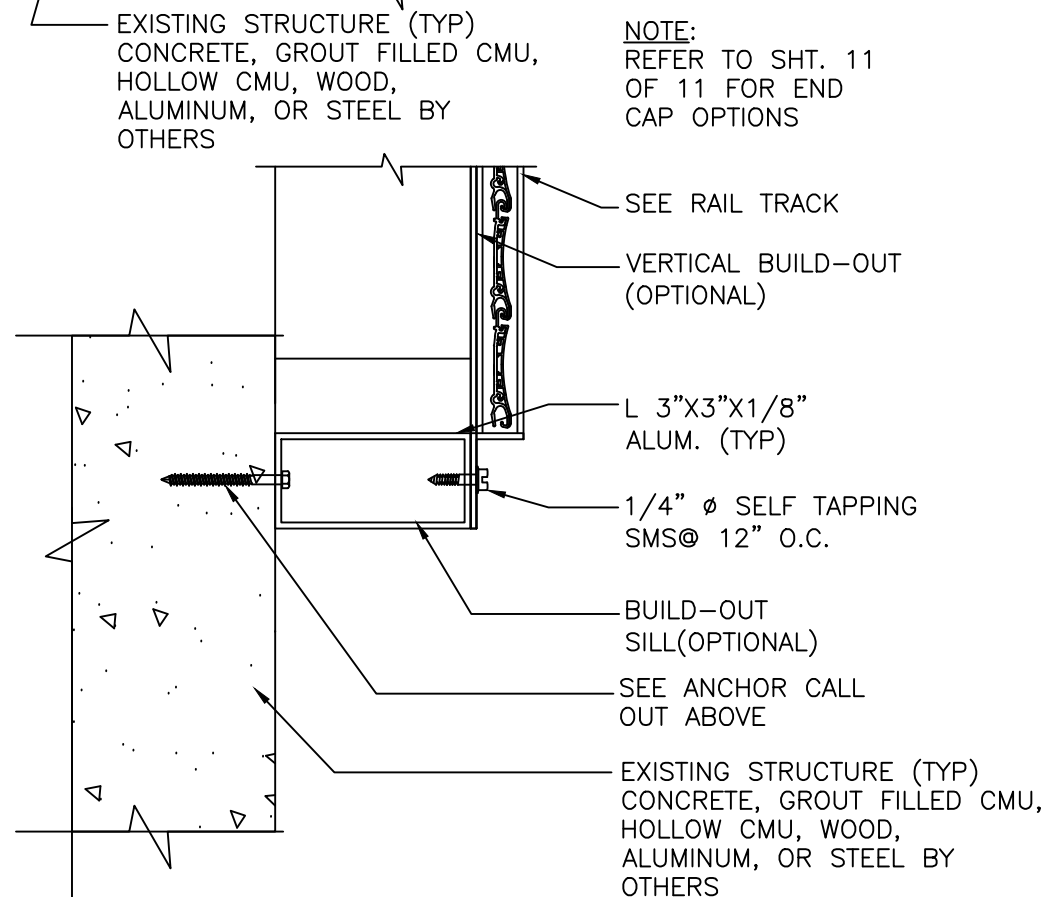
John H. Kampmann Jr., PE
TX License #: 108168
DATE:

TEXAS DEPARTMENT OF INSURANCE

MANUFACTURER (IF APPLICABLE), SUBSTRATE STRENGTH/THICKNESS, EMBEDMENT/THREAD PENETRATION, AND EDGE DISTANCE PER TABLES ON SHEETS 3, 5, 7, OF 11:
 IF CONCRETE: 1/4"Ø TAPCON @ 12" O.C.
 IF GROUT FILLED OR HOLLOW CMU: 5/16"Ø TAPCON @ 12" O.C.
 IF WOOD: 1/4"Ø LAG SCREW @ 12" O.C.
 IF ALUMINUM OR STEEL: #14 SMS @ 12" O.C.

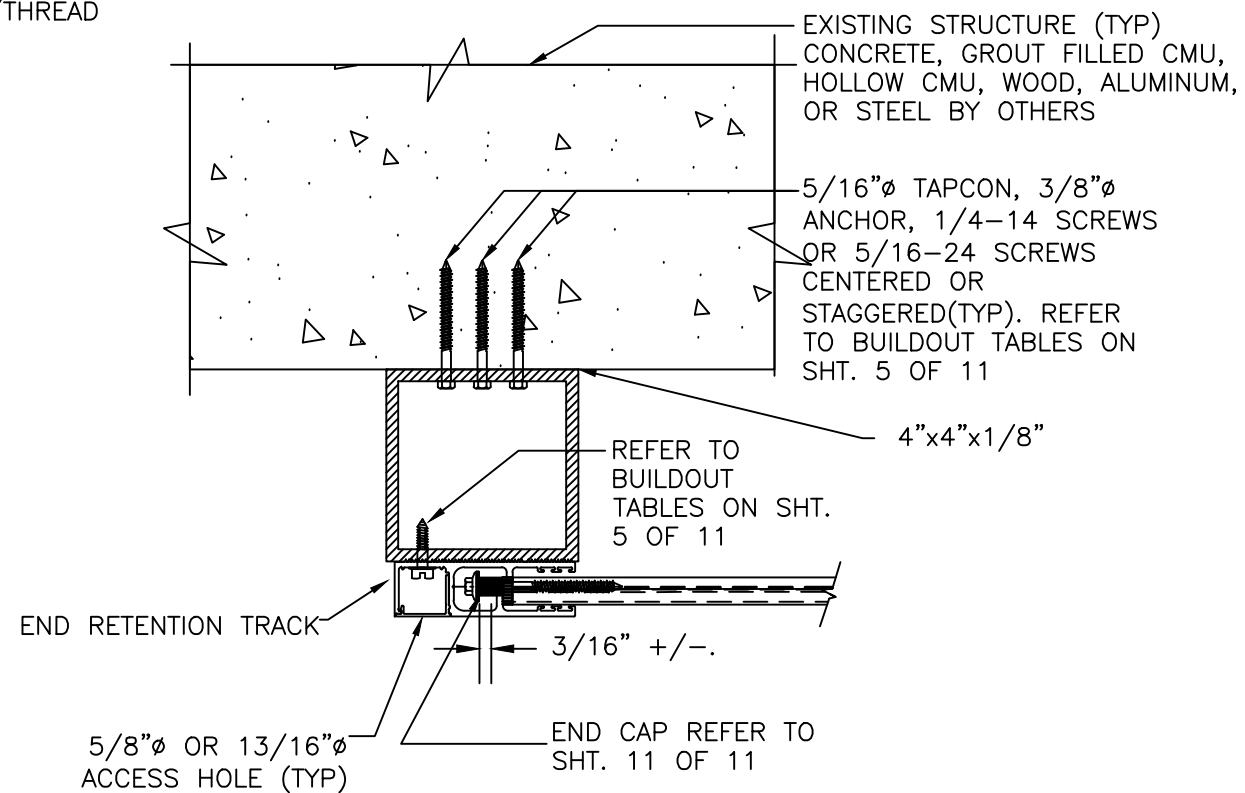


NOTE:
 REFER TO SHT. 11
 OF 11 FOR END
 CAP OPTIONS



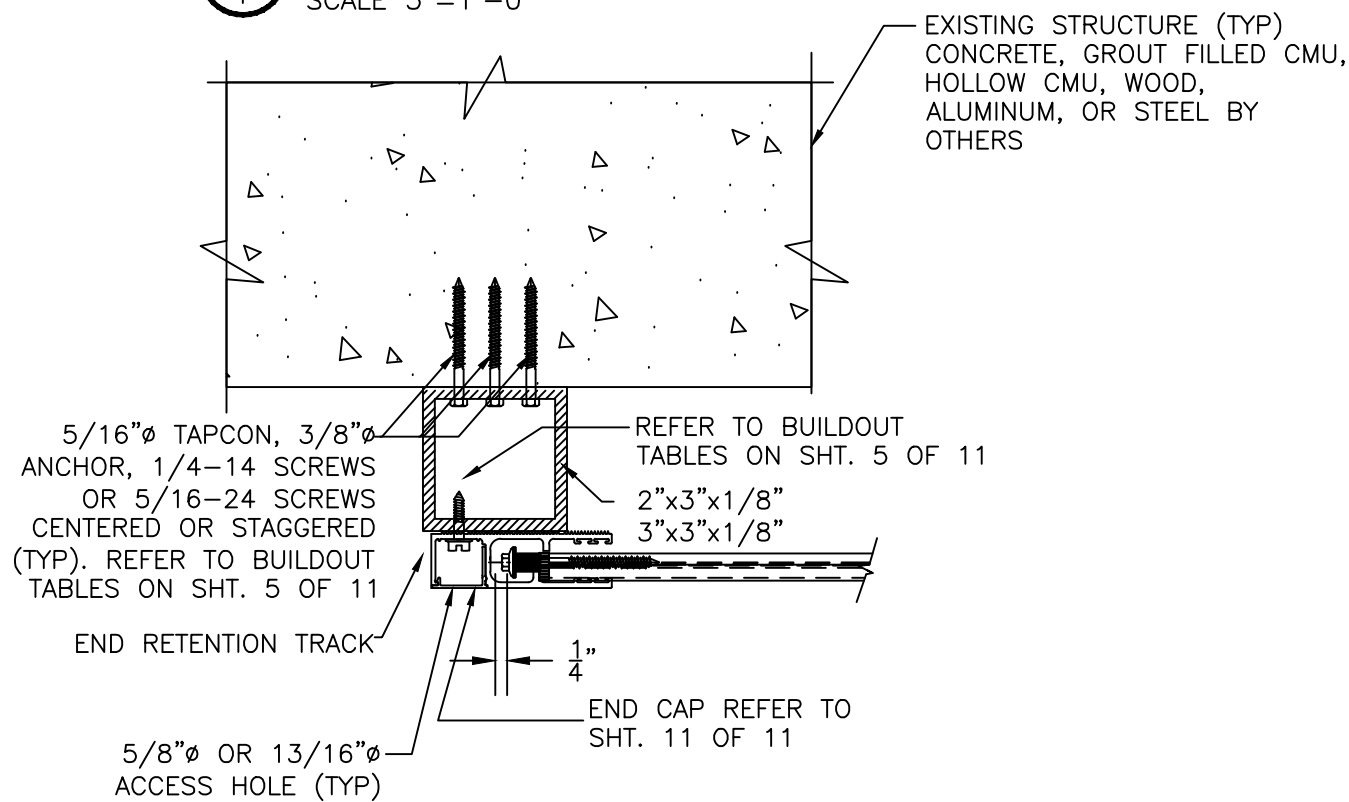
BUILT-OUT INSTALLATION
 END RETENTION TRACK
 WALL MOUNT INSTALLATION

3
 4
 SCALE 3"=1'-0"



4" BUILD-OUT INSTALLATION
 FOR END RETENTION

1
 4
 SCALE 3"=1'-0"



2"-3" BUILD-OUT INSTALLATION
 END RETENTION

2
 4
 SCALE 3"=1'-0"

John H. Kampmann Jr., PE
 TX License #: 108168
 DATE:

TX REG. #: F-13337
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DESCRIPTION
 XX/XX/XX - RESERVED.

ULTRATEK WORLDWIDE
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 Sarasota, FL 34234
 Phone: (941) 351-6700
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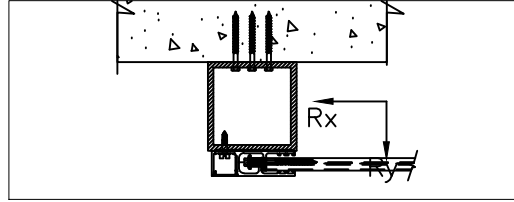
Project Name:

GREENTEK HYBRID
 ROLL-UP SHUTTER SYSTEM

TEXAS DEPARTMENT OF INSURANCE

Drawn: JK
 Project #: 21-14
 Scale: NOTED
 Date: 3/4/21
 Sheet No.:

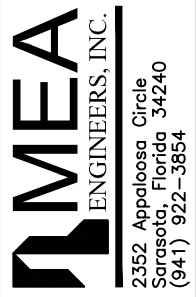
4 of 11



(BUILD-OUT MOUNT)

SLAT SPAN	DESIGN PRESSURE	Rx	Ry	MAXIMUM SPACING (O.C.)																		
				1/4" ELCO ULTRACON TO 2700 PSI MIN. CONCRETE; 1.75" MIN. EMBEDMENT; 2.5" MIN. EDGE DISTANCE	1/4" SS ITW TAPCON TO 3192 PSI MIN. CONCRETE; 1.75" MIN. EMBEDMENT; 2.5" MIN. EDGE DISTANCE	5/16" ELCO ULTRACON TO 3500 PSI MIN. CONCRETE; 2" MIN. EMBEDMENT; 3.125" MIN. EDGE DISTANCE	5/16" ITW TAPCON		1/4" POWERS POWER-BOLT TO 3000 PSI MIN. CONCRETE; 2.5" MIN. EMBEDMENT; 3" MIN. EDGE DISTANCE	1/4" ALL-POINTS SOLID-SET		1/4" LAG SCREW TO G=0.55 MIN WOOD; 1.5" MIN. EMBEDMENT; 0.75" MIN. EDGE DISTANCE	5/16" LAG SCREW TO G=0.42 MIN WOOD; 2" MIN. EMBEDMENT; 0.75" MIN. EDGE DISTANCE	#14 WOOD SCREW TO G=0.55 MIN WOOD; 1.5" MIN. EMBEDMENT; 0.75" MIN. EDGE DISTANCE	#14 410 SS SMS W/ FULL THREAD PENETRATION OR 1/4-20 410 SS THRU-BOLT TO 0.125" MIN. 6063-T6 ALUM OR A36 STEEL; 0.5" MIN. EDGE DISTANCE	5/16" 410 SS SMS W/ FULL THREAD PENETRATION OR 5/16-18 410 SS THRU-BOLT TO 0.25" MIN. 6063-T6 ALUM OR A36 STEEL; 0.625" MIN. EDGE DISTANCE	3/8" POWERS WEDGE BOLT TO 3000 PSI MIN. CONCRETE; 3.5" MIN. EMBEDMENT; 4.5" MIN. EDGE DISTANCE	3/8" ELCO CONFLX				
72"	+/- 50 PSF	678.2 LB/FT	431.0 LB/FT	5.0"	5.4"	6.0"	6.0"	6.0"	6.0"	4.3"	6.0"	6.0"	4.3"	2.7"	2.3"	2.7"	4.6"	4.6"	6.0"	6.0"	6.0"	
	+/- 60 PSF	842.2 LB/FT	554.5 LB/FT	3.9"	4.3"	6.0"	6.0"	6.0"	6.0"	3.4"	5.1"	4.8"	3.4"	2.1"		2.2"	3.6"	3.6"	6.0"	6.0"	6.0"	
	+/- 70 PSF	1004.9 LB/FT	687.4 LB/FT	3.3"	3.6"	6.0"	5.9"	6.0"	6.0"	2.8"	4.2"	4.0"	2.8"				3.0"	3.0"	6.0"	6.0"	6.0"	
	+/- 80 PSF	1166.2 LB/FT	829.2 LB/FT	2.8"	3.0"	5.1"	5.0"	5.1"	5.1"	2.3"	3.5"	3.4"	2.4"				2.5"	2.5"	6.0"	6.0"	6.0"	
	+/- 90 PSF	1325.9 LB/FT	979.9 LB/FT	2.4"	2.6"	4.4"	4.3"	4.4"	4.4"	2.0"	3.1"	2.9"	2.1"				2.1"	2.1"	6.0"	6.0"	6.0"	
	+/- 100 PSF	1484.2 LB/FT	1139.1 LB/FT	2.1"	2.3"	3.9"	3.8"	3.9"	3.9"		2.7"	2.6"							6.0"	6.0"	6.0"	
112"	+/- 45 PSF	1405.0 LB/FT	631.3 LB/FT	2.7"	2.9"	5.0"	4.9"	4.9"	4.9"	2.5"	3.6"	3.3"	2.3"				2.7"	2.9"	6.0"	6.0"	6.0"	
	+/- 50 PSF	1567.1 LB/FT	715.6 LB/FT	2.4"	2.6"	4.5"	4.4"	4.4"	4.4"	2.2"	3.2"	2.9"	2.1"				2.4"	2.5"	6.0"	6.0"	6.0"	
	+/- 55 PSF	1729.0 LB/FT	802.4 LB/FT	2.2"	2.3"	4.0"	4.0"	3.9"	3.9"		2.9"	2.7"					2.2"	2.3"	6.0"	6.0"	6.0"	
	+/- 60 PSF	1890.7 LB/FT	891.7 LB/FT		2.1"	3.6"	3.6"	3.6"	3.6"		2.6"	2.4"						2.1"	2.1"	6.0"	6.0"	6.0"
	+/- 65 PSF	2052.0 LB/FT	983.4 LB/FT			3.4"	3.3"	3.3"	3.3"		2.4"	2.2"							6.0"	6.0"	6.0"	
	+/- 70 PSF	2213.1 LB/FT	1077.6 LB/FT			3.1"	3.0"	3.0"	3.0"		2.2"	2.0"							6.0"	6.0"	6.0"	
152"	+/- 45 PSF	2292.4 LB/FT	906.2 LB/FT			3.2"	3.1"	3.1"		2.3"	2.1"							6.0"	6.0"	6.0"		
	+/- 50 PSF	2549.3 LB/FT	1028.1 LB/FT			2.9"	2.8"	2.8"		2.1"								5.7"	5.8"	6.0"		
	+/- 55 PSF	2805.7 LB/FT	1154.1 LB/FT			2.6"	2.5"	2.5"										5.1"	5.2"	6.0"		
	+/- 60 PSF	3061.8 LB/FT	1284.2 LB/FT			2.3"	2.3"	2.3"										4.7"	4.8"	6.0"		
	+/- 65 PSF	3317.3 LB/FT	1418.2 LB/FT			2.2"	2.1"	2.1"										4.3"	4.4"	5.5"		
	+/- 70 PSF	3572.4 LB/FT	1556.2 LB/FT															4.0"	4.0"	5.1"		
192"	+/- 45 PSF	3284.4 LB/FT	1205.1 LB/FT			2.3"	2.2"	2.2"										3.4"	3.5"	4.4"		
	+/- 50 PSF	3649.1 LB/FT	1371.7 LB/FT			2.0"	2.0"											4.0"	4.1"	5.2"		
	+/- 55 PSF	4013.1 LB/FT	1544.6 LB/FT															3.6"	3.7"	4.7"		
	+/- 60 PSF	4376.5 LB/FT	1723.9 LB/FT															3.3"	3.4"	4.3"		
	+/- 65 PSF	4739.2 LB/FT	1909.5 LB/FT															3.0"	3.1"	3.9"		
	+/- 70 PSF	5101.1 LB/FT	2101.3 LB/FT															2.8"	2.9"	3.6"		
204"	+/- 45 PSF	3602.0 LB/FT	1300.4 LB/FT			2.1"	2.1"	2.0"										4.1"	4.2"	5.3"		
	+/- 50 PSF	4001.3 LB/FT	1481.8 LB/FT															3.7"	3.8"	4.7"		
	+/- 55 PSF	4399.9 LB/FT	1670.3 LB/FT															3.3"	3.4"	4.3"		
	+/- 60 PSF	4797.8 LB/FT	1866.1 LB/FT															3.0"	3.1"	3.9"		
	+/- 65 PSF	5194.9 LB/FT	2069.0 LB/FT															2.8"	2.9"	3.6"		
	+/- 70 PSF	5591.1 LB/FT	2279.0 LB/FT															2.6"	2.6"	3.3"		
230"	+/- 20 PSF	1918.7 LB/FT	579.2 LB/FT	2.2"	2.3"	4.1"	4.0"	3.9"	2.2"	3.0"	2.7"					2.4"	2.7"	6.0"	6.0"	6.0"		
	+/- 25 PSF	2400.7 LB/FT	748.8 LB/FT			3.2"	3.2"	3.1"		2.4"	2.1"						2.1"	6.0"	6.0"	6.0"		
	+/- 30 PSF	2882.0 LB/FT	928.0 LB/FT			2.7"	2.6"	2.6"										5.2"	5.5"	6.0"		
	+/- 35 PSF	3362.6 LB/FT	1116.9 LB/FT			2.3"	2.2"	2.2"										4.5"	4.6"	5.8"		
	+/- 40 PSF	3842.5 LB/FT	1315.2 LB/FT															3.9"	4.0"	5.0"		
	+/- 45 PSF	4321.5 LB/FT	1523.1 LB/FT															3.4"	3.6"	4.4"		
272"	+/- 20 PSF	2477.2 LB/FT	709.1 LB/FT			3.2"	3.2"	3.1"		2.4"	2.1"					2.2"	6.0"	6.0"	6.0"			
	+/- 25 PSF	3097.3 LB/FT	922.3 LB/FT			2.5"	2.5"	2.4"										4.9"	5.2"	6.0"		
	+/- 30 PSF	3716.4 LB/FT	1149.7 LB/FT			2.1"	2.1"	2.0"		2.1"	2.1"							4.1"	4.3"	5.3"		
	+/- 35 PSF	4334.6 LB/FT	1391.1 LB/FT															3.5"	3.6"	4.5"		
	+/- 40 PSF	4951.6 LB/FT	1646.4 LB/FT															3.0"	3.2"	3.9"		
	+/- 45 PSF	5567.6 LB/FT	1915.7 LB/FT															2.7"	2.8"	3.5"		
288"	+/- 20 PSF	2701.4 LB/FT	760.8 LB/FT			2.9"	2.9"	2.8"		2.2"						2.0"	5.7"	6.0"	6.0"			
	+/- 25 PSF	3377.0 LB/FT	991.9 LB/FT			2.3"	2.3"	2.2"										4.5"	4.8"	5.9"		
	+/- 30 PSF	4051.6 LB/FT	1239.1 LB/FT															3.8"	3.9"	4.9"		
	+/- 35 PSF	4725.0 LB/FT	1502.4 LB/FT															3.2"	3.3"	4.2"		
	+/- 40 PSF	5397.3 LB/FT	1781.6 LB/FT															2.8"	2.9"	3.6"		
	+/- 45 PSF	6068.3 LB/FT	2076.7 LB/FT															2.5"	2.6"	3.2"		

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REV.	DESCRIPTION
1	XX/XX/XX - RESERVED.

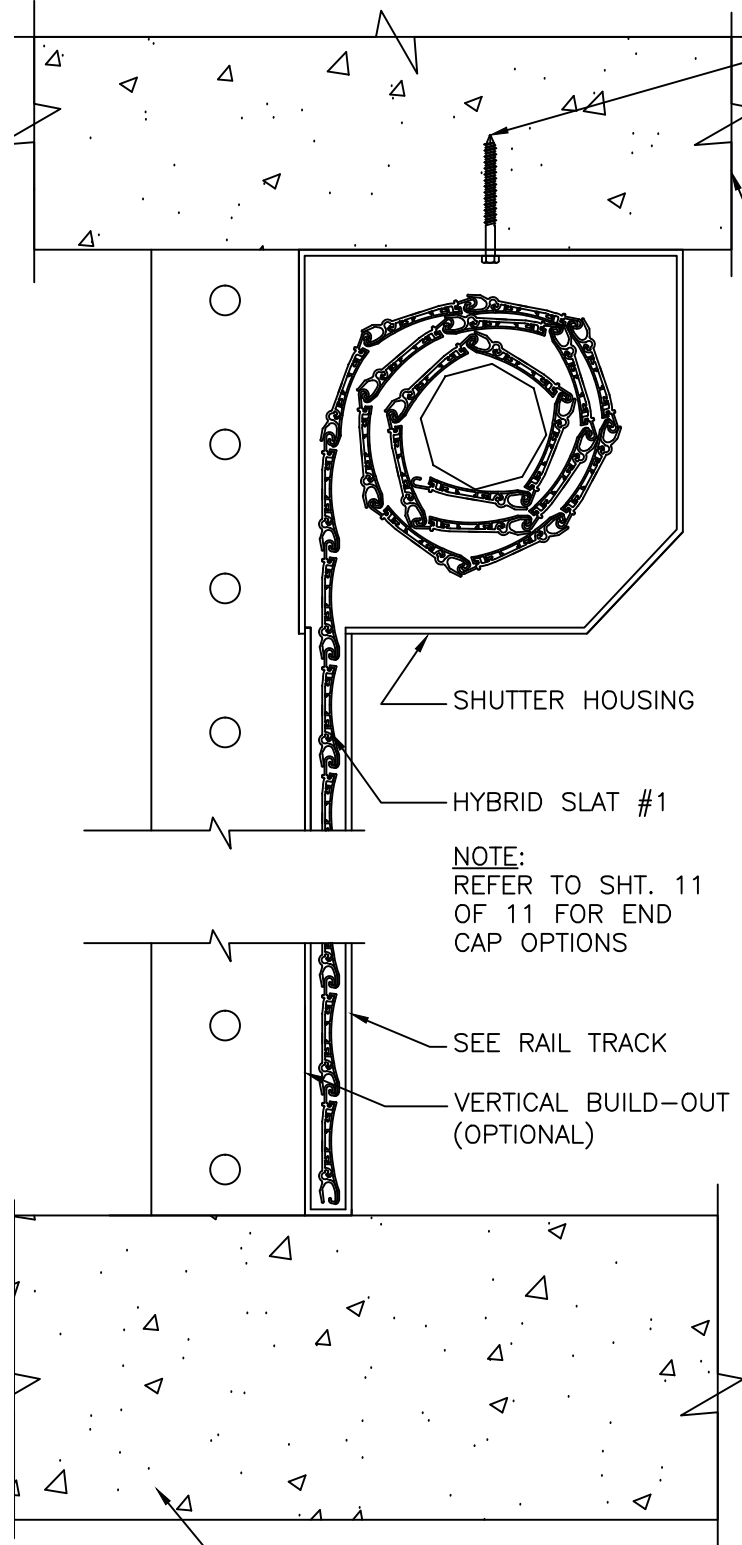
Project Name: **ULTRATEK WORLDWIDE**
3801 N. Washington Blvd.
Sarasota, FL 34234
Phone: (941) 351-6700
info@ultratek.com

Description: **GREENTEK HYBRID ROLL-UP SHUTTER SYSTEM**

Drawn:	JK
Project #:	21-14
Scale:	NOTED
Date:	3/4/21
Sheet No.:	

John H. Kampmann Jr., PE
TX License #: 108168
DATE:

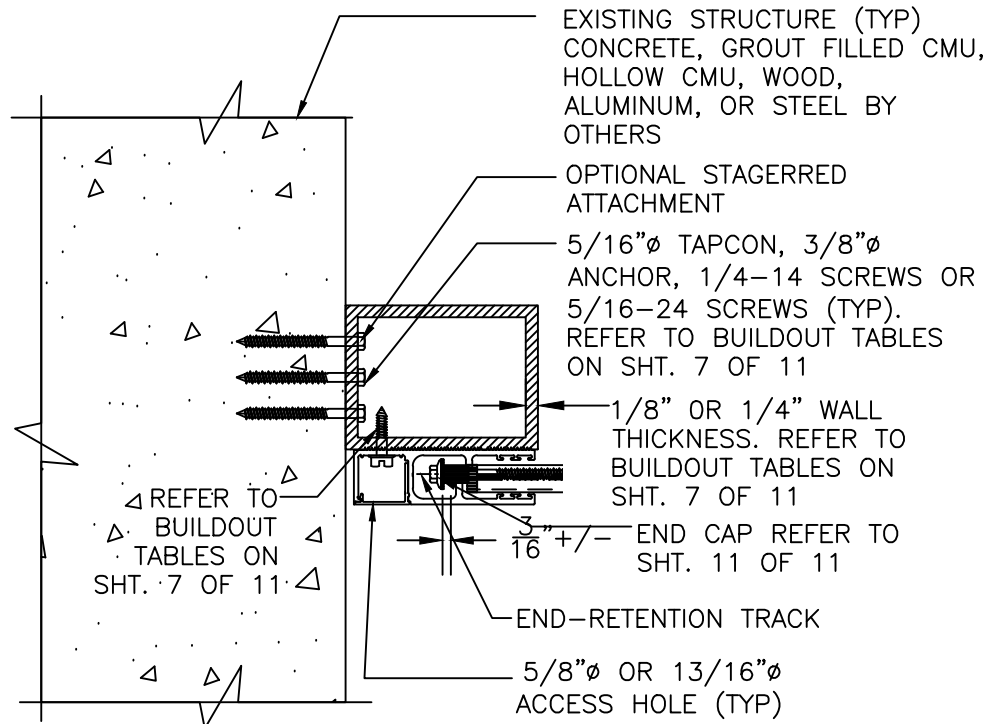
TEXAS DEPARTMENT OF INSURANCE



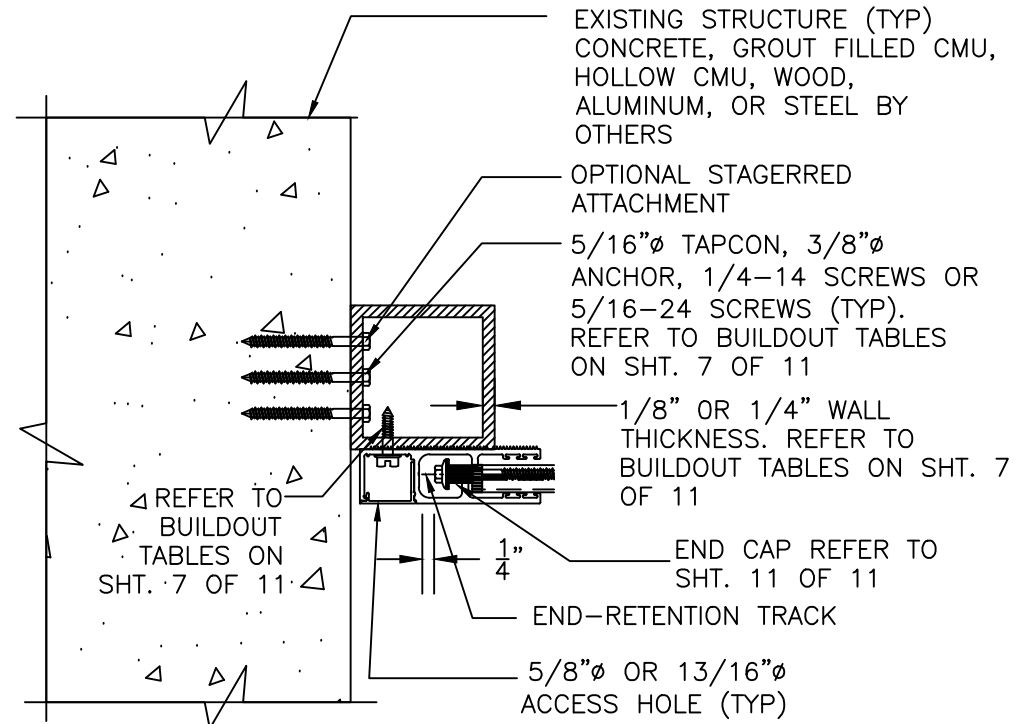
EXISTING STRUCTURE (TYP)
CONCRETE, GROUT FILLED CMU,
HOLLOW CMU, WOOD,
ALUMINUM, OR STEEL BY
OTHERS

MANUFACTURER (IF APPLICABLE), SUBSTRATE STRENGTH/THICKNESS, EMBEDMENT/THREAD PENETRATION, AND EDGE DISTANCE PER TABLES ON SHEETS 3, 5, 7, OF 11:
IF CONCRETE: 5/16"Ø ULTRACON/TAPCON @ 12" O.C.
IF GROUT FILLED OR HOLLOW CMU: 5/16"Ø TAPCON @ 12" O.C.
IF WOOD: 5/16"Ø LAG SCREW @ 12" O.C.
IF ALUMINUM OR STEEL: 5/16"Ø SMS @ 12" O.C.

EXISTING STRUCTURE (TYP)
CONCRETE, GROUT FILLED CMU,
HOLLOW CMU, WOOD,
ALUMINUM, OR STEEL BY
OTHERS



1
6 2", 3" OR 4" BUILD-OUT TRAPPED INSTALLATION END RETENTION
SCALE 3"=1'-0"

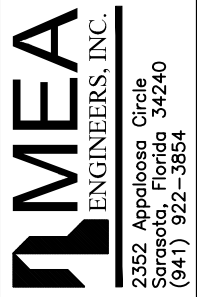


2
6 3" OR 2" BUILD-OUT TRAPPED INSTALLATION END RETENTION
SCALE 3"=1'-0"

NOTE: SEE BUILD-OUT TABLE CORRESPONDING TO THE BUILD-OUT WIDTH AGAINST EXISTING STRUCTURE

3
6 3/8" ANGLE TRAPPED INSTALLATION END RETENTION
SCALE 3"=1'-0"

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REV.	DESCRIPTION
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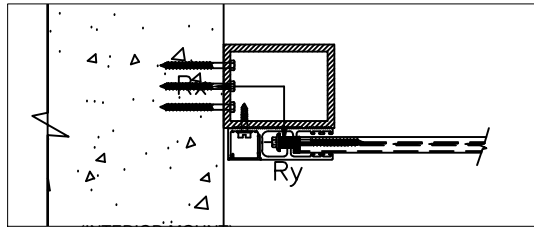
Project Name: **ULTRATEK WORLDWIDE**
3801 N. Washington Blvd.
Sarasota, FL 34234
Phone: (941) 351-6700
info@ultratek.com

TEXAS DEPARTMENT OF INSURANCE

Description: **GREENTEK HYBRID ROLL-UP SHUTTER SYSTEM**

Drawn:	JK
Project #:	21-14
Scale:	NOTED
Date:	3/4/21
Sheet No.:	

John H. Kampmann Jr., PE
TX License #: 108168
DATE:



(INTERIOR MOUNT)

SLAT SPAN	DESIGN PRESSURE	R _x	R _y	MAXIMUM SPACING (O.C.)																
				1/4" ELCO ULTRACON TO 2700 PSI MIN. CONCRETE; 1.75" MIN. EMBEDMENT; 2.5" MIN. EDGE DISTANCE	1/4" SS ITW TAPCON TO 3192 PSI MIN. CONCRETE; 1.75" MIN. EMBEDMENT; 2.5" MIN. EDGE DISTANCE	5/16" ELCO ULTRACON TO 3500 PSI MIN. CONCRETE; 2" MIN. EMBEDMENT; 3.125" MIN. EDGE DISTANCE	5/16" ITW TAPCON TO 2899 PSI MIN. CONCRETE; 2.25" MIN. EMBEDMENT; 3.125" MIN. EDGE DISTANCE		TO GROUT-FILLED CONCRETE BLOCK; 2.25" MIN. EMBEDMENT; 4" MIN. EDGE DISTANCE	TO HOLLOW CONCRETE BLOCK; 1.75" MIN. EMBEDMENT; 4" MIN. EDGE DISTANCE	1/4" POWERS POWER-BOLT TO 3000 PSI MIN. CONCRETE; 2.5" MIN. EMBEDMENT; 3" MIN. EDGE DISTANCE	1/4" ALL-POINTS SOLID-SET TO 3000 PSI MIN. CONCRETE; 0.875" MIN. EMBEDMENT; 3" MIN. EDGE DISTANCE	TO HOLLOW BLOCK; 0.875" MIN. EMBEDMENT; 3" MIN. EDGE DISTANCE	1/4" LAG SCREW TO G=0.55 MIN WOOD; 1.5" MIN. EMBEDMENT; 0.75" MIN. EDGE DISTANCE	5/16" LAG SCREW TO G=0.42 MIN WOOD; 2" MIN. EMBEDMENT; 0.75" MIN. EDGE DISTANCE	#14 WOOD SCREW TO G=0.55 MIN WOOD; 1.5" MIN. EMBEDMENT; 0.75" MIN. EDGE DISTANCE	#14 410 SS SMS W/ FULL THREAD PENETRATION OR 1/4-20 410 SS THRU-BOLT TO 0.125" MIN. 6063-T6 ALUM OR A36 STEEL; 0.5" MIN. EDGE DISTANCE	5/16" 410 SS SMS W/ FULL THREAD PENETRATION OR 5/16-18 410 SS THRU-BOLT TO 0.25" MIN. 6063-T6 ALUM OR A36 STEEL; 0.625" MIN. EDGE DISTANCE	3/8" POWERS WEDGE BOLT TO 3000 PSI MIN. CONCRETE; 3.5" MIN. EMBEDMENT; 4.5" MIN. EDGE DISTANCE	3/8" ELCO CONFLX TO 1819 PSI MIN. CONCRETE; 3.5" MIN. EMBEDMENT; 3.75" MIN. EDGE DISTANCE
72"	+/- 35 PSF	890.7 LB/FT	318.5 LB/FT	4.7"	5.2"	6.0"	6.0"	6.0"	3.0"	5.2"	5.5"	3.9"	3.8"	3.5"	3.5"	3.1"	2.7"	6.0"	6.0"	6.0"
	+/- 40 PSF	1112.1 LB/FT	404.7 LB/FT	3.7"	4.2"	6.0"	6.0"	6.0"	2.4"	4.2"	4.4"	3.1"	3.0"	2.8"	2.8"	2.5"	2.2"	6.0"	6.0"	6.0"
	+/- 45 PSF	1336.0 LB/FT	496.4 LB/FT	3.1"	3.5"	5.5"	5.3"	5.9"	2.0"	3.5"	3.6"	2.6"	2.5"	2.3"	2.3"	2.0"		6.0"	6.0"	6.0"
	+/- 50 PSF	1562.0 LB/FT	593.5 LB/FT	2.6"	2.9"	4.7"	4.5"	5.0"		3.0"	3.1"	2.2"	2.1"					6.0"	6.0"	6.0"
	+/- 60 PSF	1790.1 LB/FT	695.9 LB/FT	2.3"	2.6"	4.1"	3.9"	4.3"		2.6"	2.7"							6.0"	6.0"	6.0"
	+/- 70 PSF	2020.0 LB/FT	803.4 LB/FT			3.6"	3.5"	3.8"		2.2"	2.3"							6.0"	6.0"	6.0"
	+/- 80 PSF	2251.7 LB/FT	915.9 LB/FT		2.0"	3.2"	3.1"	3.4"		2.0"	2.1"							6.0"	6.0"	6.0"
+/- 95 PSF	2484.9 LB/FT	1033.2 LB/FT			2.9"	2.8"	3.1"										6.0"	5.7"	6.0"	
112"	+/- 35 PSF	1713.6 LB/FT	462.7 LB/FT	2.6"	2.9"	4.6"	4.4"	5.0"		2.9"	3.0"	2.2"	2.3"	2.1"	2.1"		6.0"	6.0"	6.0"	
	+/- 40 PSF	1915.7 LB/FT	522.6 LB/FT	2.3"	2.6"	4.1"	4.0"	4.5"	2.3"	2.6"	2.7"		2.0"				6.0"	6.0"	6.0"	
	+/- 45 PSF	2118.6 LB/FT	584.1 LB/FT	2.1"	2.4"	3.7"	3.6"	4.0"		2.3"	2.4"						6.0"	6.0"	6.0"	
	+/- 50 PSF	2322.2 LB/FT	646.9 LB/FT		2.1"	3.4"	3.3"	3.7"		2.1"	2.2"						6.0"	6.0"	6.0"	
	+/- 60 PSF	2526.5 LB/FT	711.3 LB/FT			3.1"	3.0"	3.4"			2.0"						6.0"	6.0"	6.0"	
	+/- 70 PSF	2731.4 LB/FT	777.1 LB/FT			2.9"	2.8"	3.1"									6.0"	5.7"	6.0"	
	+/- 80 PSF	2937.0 LB/FT	844.4 LB/FT			2.7"	2.6"	2.9"									6.0"	5.3"	6.0"	
152"	+/- 90 PSF	3143.3 LB/FT	913.1 LB/FT			2.5"	2.4"	2.7"									6.0"	4.9"	6.0"	
	+/- 35 PSF	2731.1 LB/FT	657.6 LB/FT			3.0"	2.8"	3.2"									6.0"	5.9"	6.0"	
	+/- 40 PSF	3045.2 LB/FT	743.5 LB/FT			2.7"	2.5"	2.9"									6.0"	5.2"	6.0"	
	+/- 45 PSF	3360.5 LB/FT	831.7 LB/FT			2.4"	2.3"	2.6"									5.8"	4.7"	6.0"	
	+/- 50 PSF	3677.0 LB/FT	922.4 LB/FT			2.2"	2.1"	2.4"									5.3"	4.3"	6.0"	
	+/- 60 PSF	3994.6 LB/FT	1015.5 LB/FT			2.0"		2.2"									4.9"	4.0"	5.6"	
	+/- 70 PSF	4313.4 LB/FT	1110.9 LB/FT					2.0"									4.5"	3.7"	5.1"	
192"	+/- 80 PSF	4633.3 LB/FT	1208.8 LB/FT														4.2"	3.4"	4.8"	
	+/- 90 PSF	4954.3 LB/FT	1309.0 LB/FT														3.9"	3.2"	4.5"	
	+/- 35 PSF	3862.7 LB/FT	867.0 LB/FT			2.1"	2.0"	2.3"									5.2"	4.2"	5.9"	
	+/- 40 PSF	4304.7 LB/FT	982.9 LB/FT					2.1"									4.7"	3.8"	5.3"	
	+/- 45 PSF	4748.6 LB/FT	1102.6 LB/FT														4.2"	3.4"	4.8"	
	+/- 50 PSF	5194.3 LB/FT	1226.2 LB/FT														3.8"	3.1"	4.4"	
	+/- 60 PSF	5641.9 LB/FT	1353.5 LB/FT														3.5"	2.8"	4.0"	
204"	+/- 70 PSF	6091.4 LB/FT	1484.6 LB/FT														3.2"	2.6"	3.7"	
	+/- 80 PSF	6542.5 LB/FT	1619.5 LB/FT														3.0"	2.4"	3.4"	
	+/- 85 PSF	6995.4 LB/FT	1758.0 LB/FT														2.8"	2.3"	3.2"	
	+/- 30 PSF	4224.3 LB/FT	933.1 LB/FT					2.1"									4.8"	3.8"	5.4"	
	+/- 35 PSF	4707.6 LB/FT	1058.9 LB/FT														4.3"	3.4"	4.8"	
	+/- 40 PSF	5193.0 LB/FT	1189.1 LB/FT														3.9"	3.1"	4.4"	
	+/- 45 PSF	5680.5 LB/FT	1323.5 LB/FT														3.5"	2.8"	4.0"	
230"	+/- 50 PSF	6170.1 LB/FT	1462.2 LB/FT														3.2"	2.6"	3.7"	
	+/- 60 PSF	6661.8 LB/FT	1605.2 LB/FT														3.0"	2.4"	3.4"	
	+/- 70 PSF	7155.4 LB/FT	1752.4 LB/FT														2.8"	2.2"	3.1"	
	+/- 75 PSF	7651.0 LB/FT	1903.8 LB/FT														2.6"	2.1"	2.9"	
	+/- 20 PSF	2201.6 LB/FT	424.1 LB/FT	2.2"	2.4"	3.8"	3.7"	4.2"		2.3"	2.5"		2.0"				6.0"	6.0"	6.0"	
	+/- 25 PSF	2764.3 LB/FT	545.0 LB/FT			3.1"	2.9"	3.3"									6.0"	6.0"	6.0"	
	+/- 30 PSF	3330.1 LB/FT	671.7 LB/FT			2.5"	2.4"	2.7"									6.0"	4.9"	6.0"	
272"	+/- 35 PSF	3899.0 LB/FT	804.2 LB/FT			2.1"	2.0"	2.3"									5.3"	4.2"	5.9"	
	+/- 40 PSF	4471.0 LB/FT	942.3 LB/FT					2.0"									4.6"	3.7"	5.2"	
	+/- 45 PSF	5046.0 LB/FT	1086.2 LB/FT														4.0"	3.2"	4.6"	
	+/- 50 PSF	5623.9 LB/FT	1235.7 LB/FT														3.6"	2.9"	4.1"	
	+/- 20 PSF	2821.5 LB/FT	516.1 LB/FT			3.0"	2.9"	3.3"									6.0"	5.9"	6.0"	
	+/- 25 PSF	3542.0 LB/FT	666.7 LB/FT			2.4"	2.3"	2.6"									5.9"	4.7"	6.0"	
	+/- 30 PSF	4267.2 LB/FT	825.7 LB/FT					2.2"									4.9"	3.9"	5.5"	
288"	+/- 35 PSF	4997.0 LB/FT	993.2 LB/FT														4.1"	3.3"	4.7"	
	+/- 40 PSF	5731.4 LB/FT	1169.1 LB/FT														3.6"	2.9"	4.1"	
	+/- 45 PSF	6470.2 LB/FT	1353.3 LB/FT														3.2"	2.5"	3.6"	
	+/- 70 PSF	7213.4 LB/FT	1545.8 LB/FT														2.8"	2.3"	3.2"	
	+/- 20 PSF	3069.9 LB/FT	552.4 LB/FT			2.8"	2.6"	3.0"									6.0"	5.5"	6.0"	
	+/- 25 PSF	3854.0 LB/FT	715.1 LB/FT			2.2"	2.1"	2.4"									5.4"	4.3"	6.0"	
	+/- 30 PSF	4643.5 LB/FT	887.4 LB/FT														4.5"	3.6"	5.1"	
288"	+/- 35 PSF	5438.2 LB/FT	1069.3 LB/FT														3.8"	3.0"	4.3"	
	+/- 40 PSF	6238.2 LB/FT	1260.8 LB/FT														3.3"	2.6"	3.7"	
	+/- 45 PSF	6683.1 LB/FT	921.8 LB/FT														3.3"	2.6"	3.7"	
	+/- 50 PSF	7453.2 LB/FT	1072.3 LB/FT														3.0"	2.3"	3.3"	

John H. Kampmann Jr., PE
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DESCRIPTION
XX/XX/XX - RESERVED.

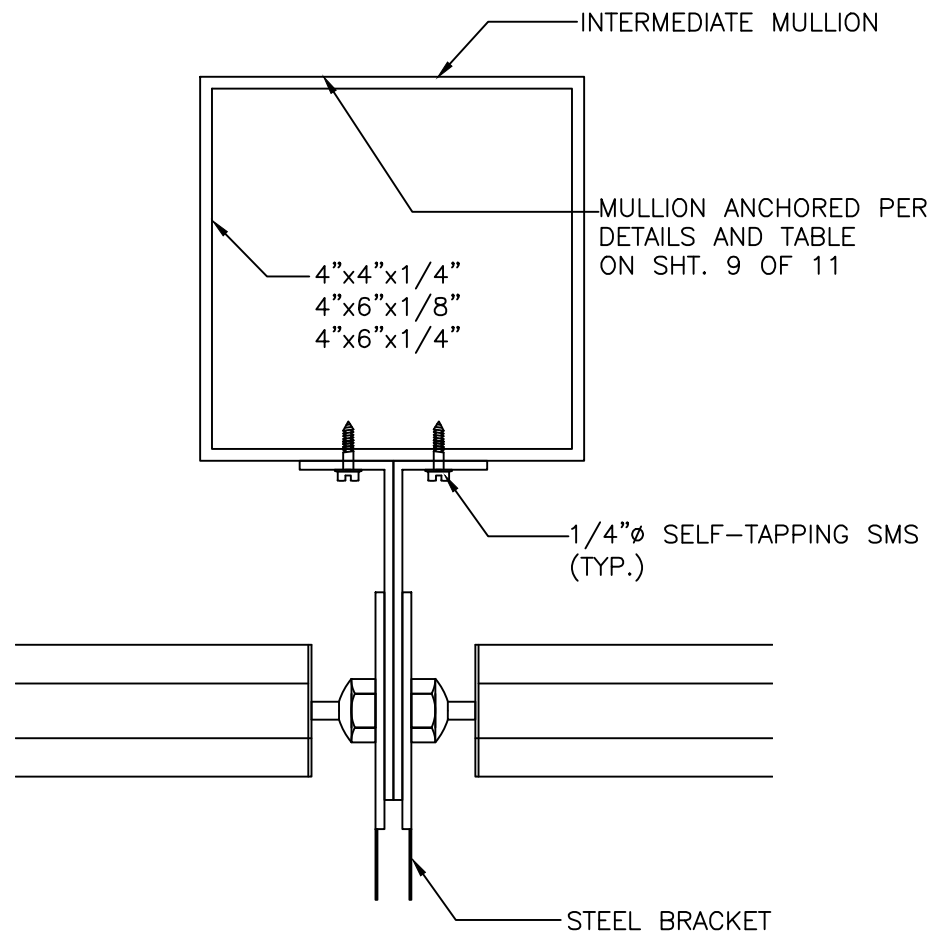
REV. 1

Project Name: **ULTRATEK WORLDWIDE**
3801 N. Washington Blvd.
Sarasota, FL 34234
Phone: (941) 351-6700
info@ultratek.com

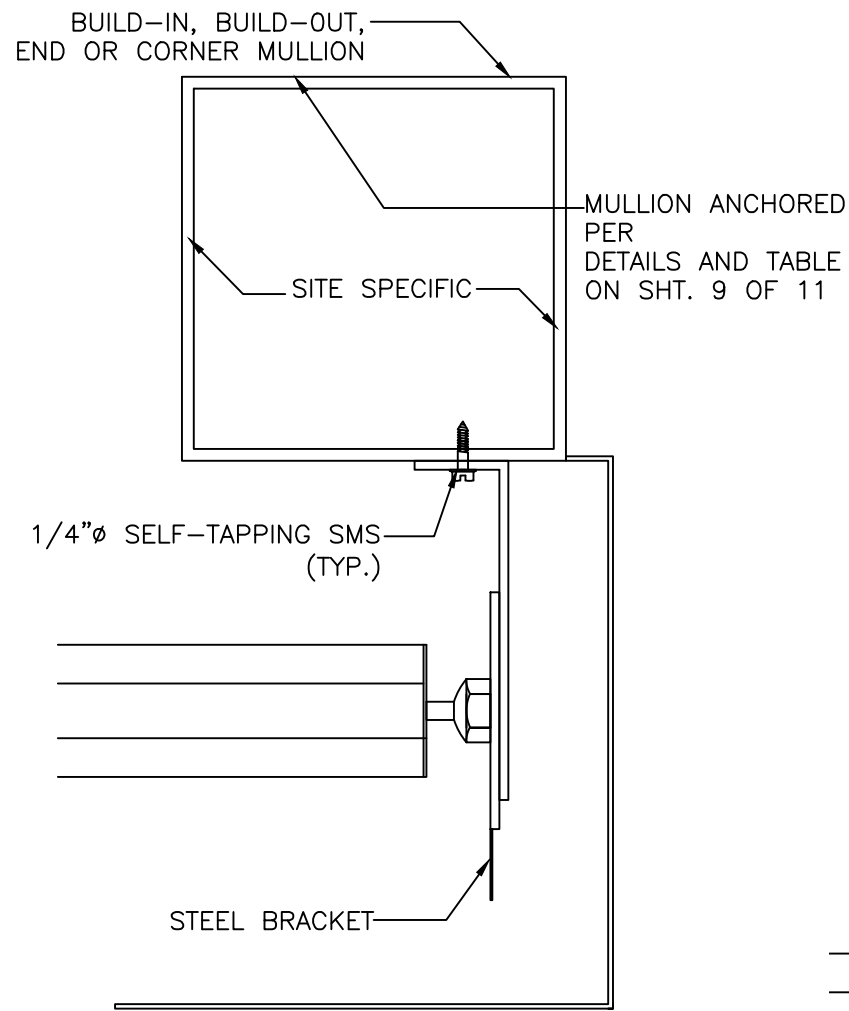
Description: **GREENTEK HYBRID ROLL-UP SHUTTER SYSTEM**

Drawn: JK
Project #: 21-14
Scale: NOTED
Date: 3/4/21
Sheet No.: 7 of 11

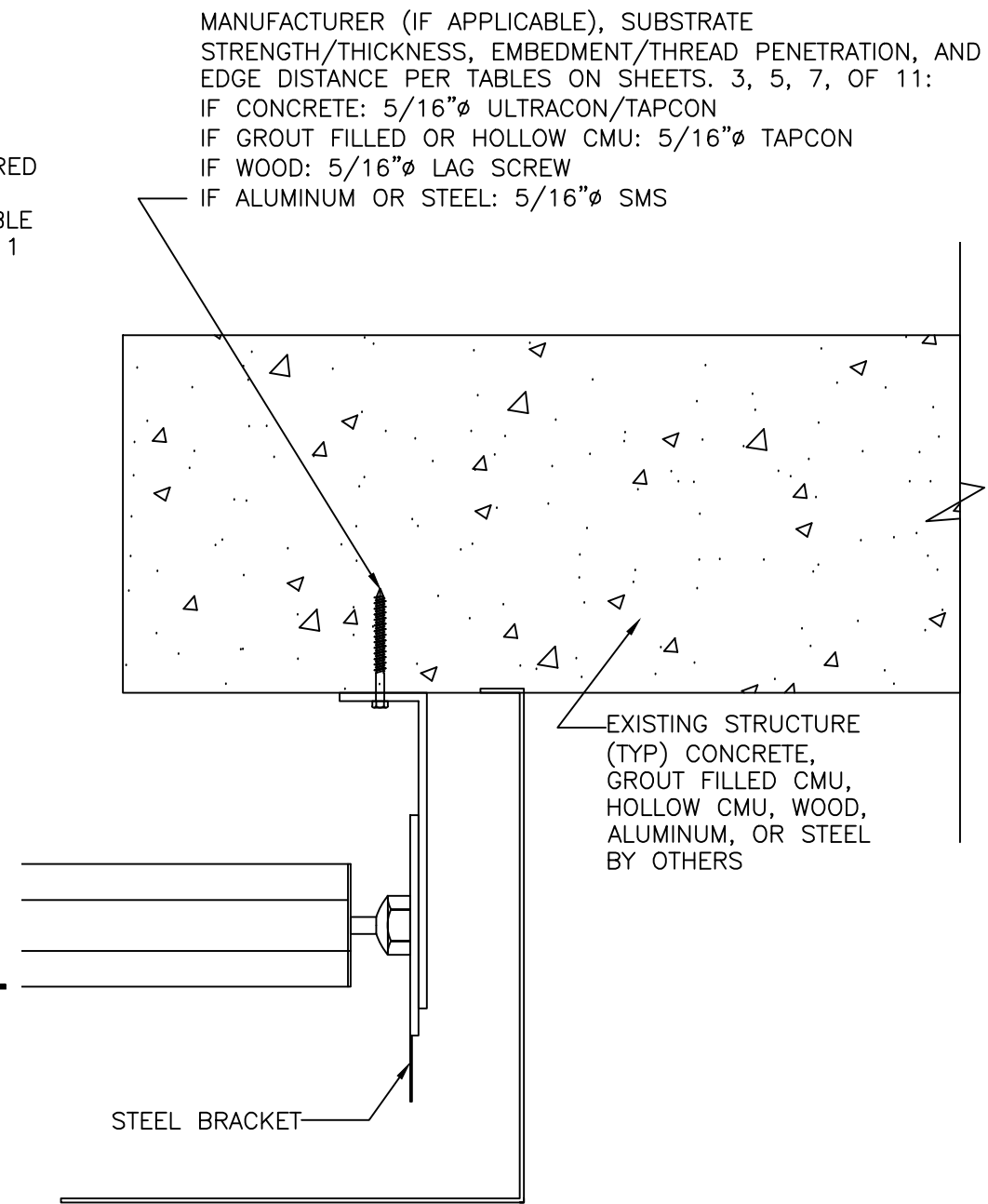
TEXAS DEPARTMENT OF INSURANCE



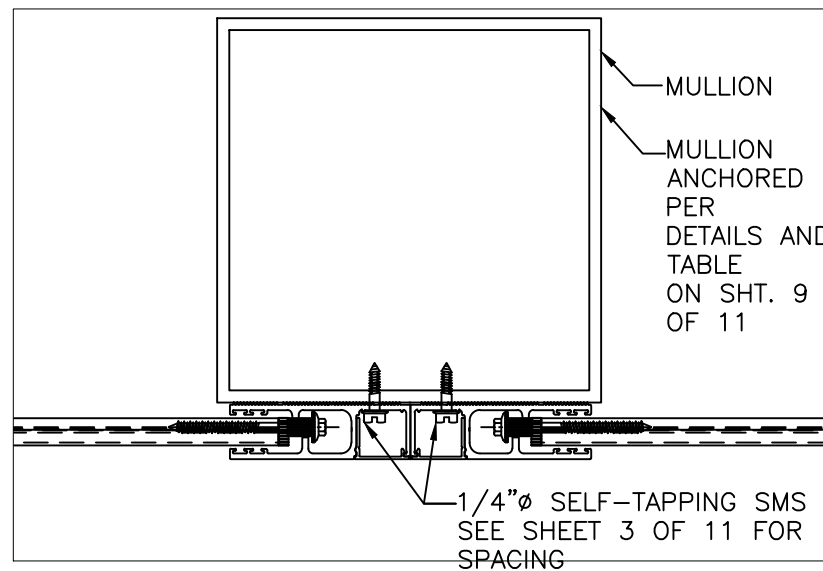
1 MOUNTING BRACKET INSTALLATION
8 END RETENTION INSTALLATION
 SCALE 3"=1'-0"



2 MOUNTING BRACKET INSTALLATION
8 END RETENTION INSTALLATION
 SCALE 3"=1'-0"



3 MOUNTING BRACKET INSTALLATION
8 END RETENTION INSTALLATION
 SCALE 3"=1'-0"



4 MOUNTING BRACKET INSTALLATION
8 END RETENTION INSTALLATION
 SCALE 3"=1'-0"

SPAN	GLASS SEPARATION
72"	7.250"
92"	7.063"
112"	7.609"
132"	8.298"
152"	9.045"
172"	9.825"
192"	10.631"
204"	11.125"
230"	11.207"
244"	11.308"
258"	11.433"
272"	11.574"
286"	11.727"
288"	11.750"

SEPARATION FROM GLAZING NOTES:

1. SEPARATION FROM GLAZING IS REQUIRED FOR ALL INSTALLATIONS WITHIN ESSENTIAL FACILITIES.
2. SEPARATION IS NOT REQUIRED FROM ANY FENESTRATION PRODUCT THAT DOES NOT CONTAIN GLAZING.
3. SEPARATION FROM GLAZING IS NOT REQUIRED FOR INSTALLATIONS OUTSIDE OF ESSENTIAL FACILITIES.
4. INTERPOLATION OF THIS TABLE IS NOT PERMITTED. UTILIZE THE NEXT HIGHEST SEPARATION FROM GLAZING VALUE IF NEEDED.

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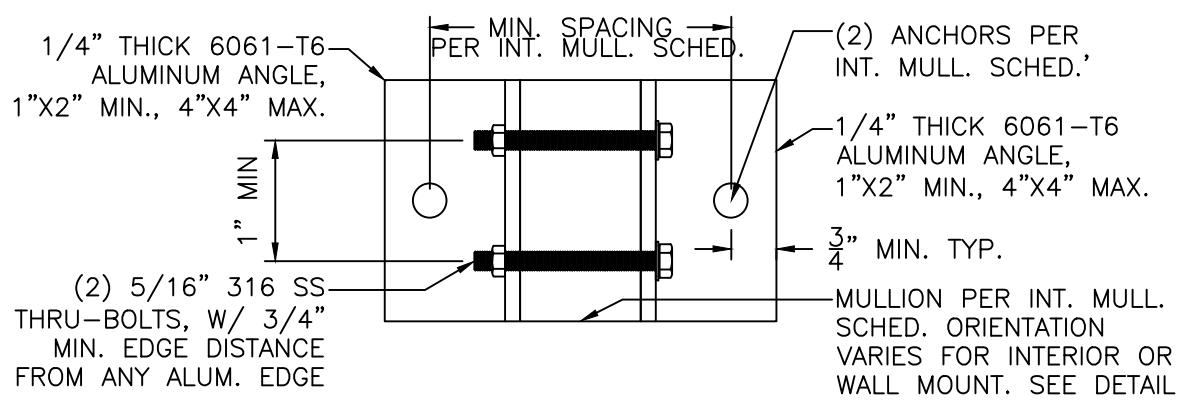
REV. 1
 DESCRIPTION: XX/XX/XX - RESERVED.

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 3801 N. Washington Blvd.
 Sarasota, FL 34234
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TEXAS DEPARTMENT OF INSURANCE
 Description: **GREENTEK HYBRID ROLL-UP SHUTTER SYSTEM**

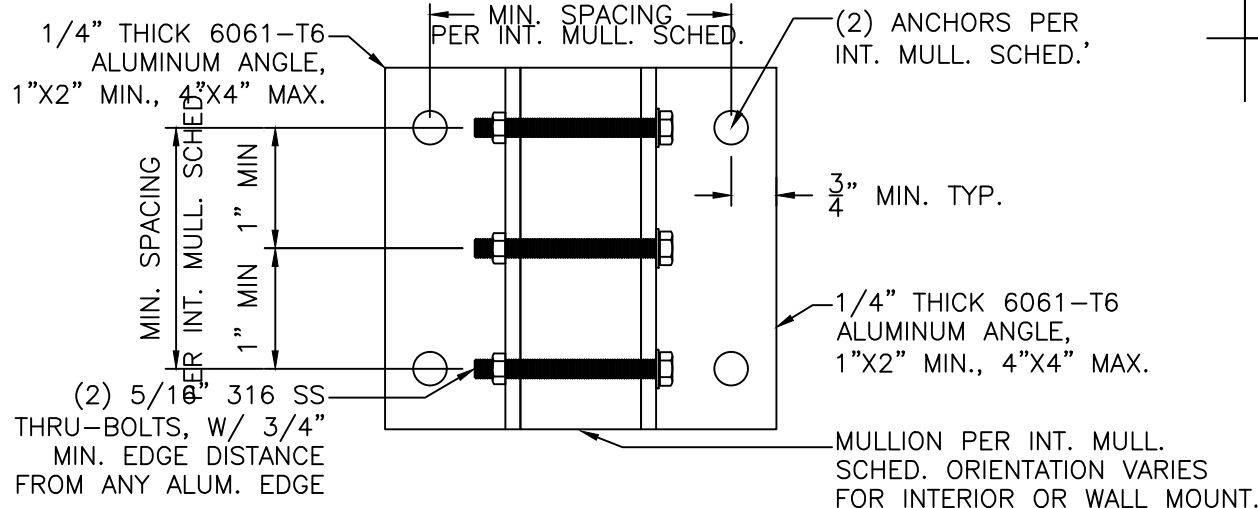
Drawn: JK
 Project #: 21-14
 Scale: NOTED
 Date: 3/4/21
 Sheet No.:

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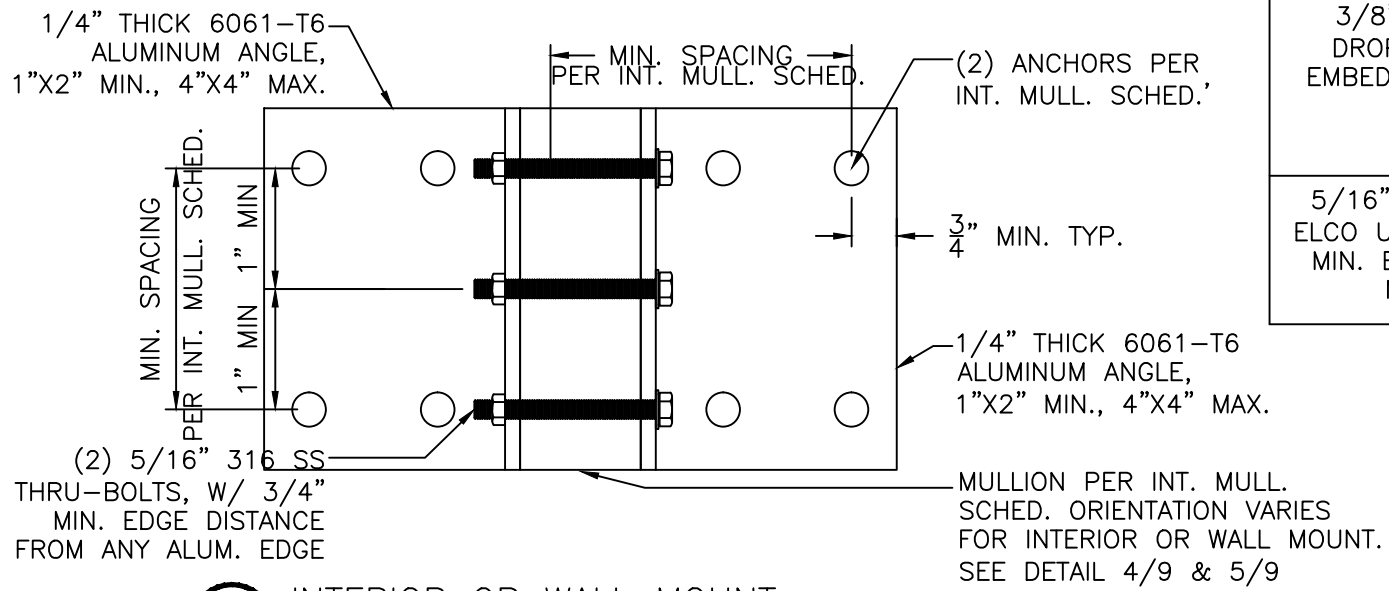
1 INTERIOR OR WALL MOUNT

9 END RETENTION INSTALLATION N.T.S.



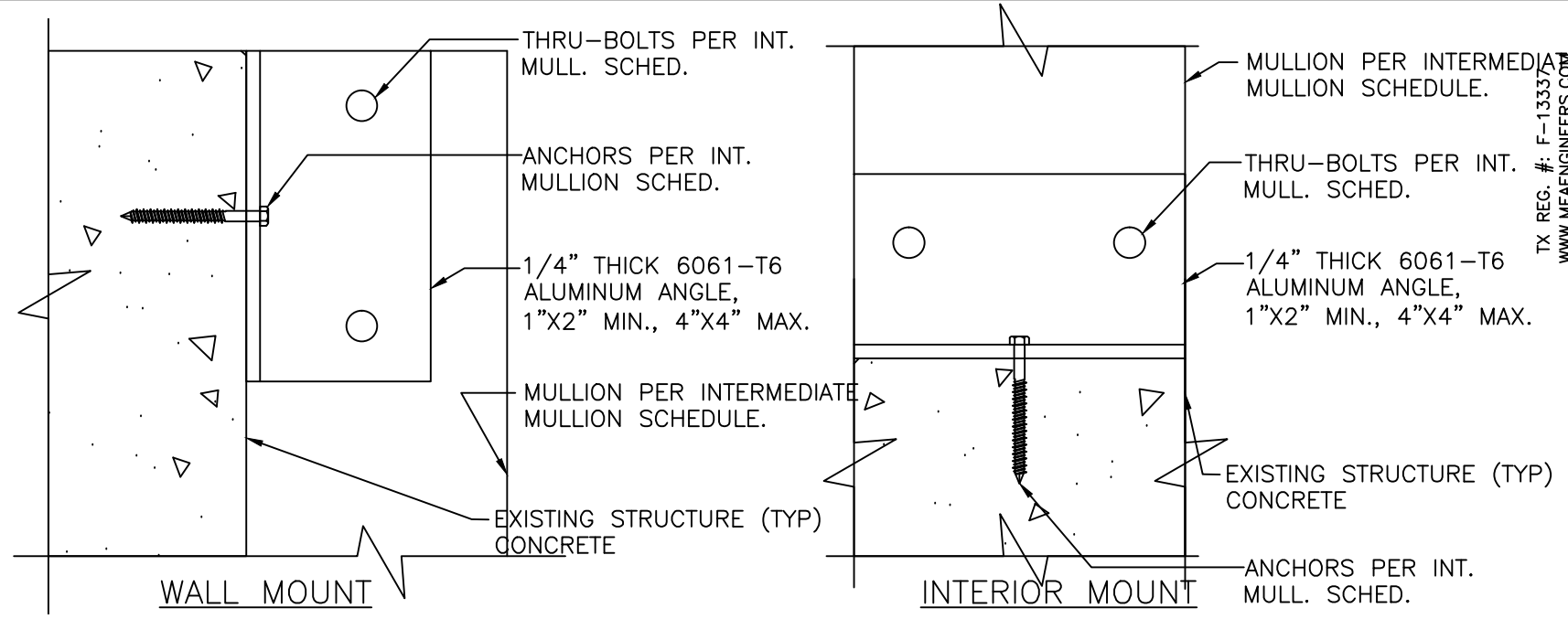
2 INTERIOR OR WALL MOUNT

9 END RETENTION INSTALLATION N.T.S.



3 INTERIOR OR WALL MOUNT

9 END RETENTION INSTALLATION N.T.S.



4 MOUNTING CONDITIONS VERTICAL SECTIONS

9 END RETENTION INSTALLATION N.T.S.

5

9

INTERMEDIATE MULLION SCHED. W/ EQUAL SPANS BOTH SIDES								
ANCHOR TYPE	MINIMUM SPACING	MINIMUM EDGE DISTANCE	CONNECTION DETAIL	MIN. MULLION SIZE	MAX. SLAT SPAN	MAX. MULLION HT.	MAX. DP	E.R. OR NON E.R
3/8" POWERS WEDGE BOLTS W/ 3-1/2" EMBED TO 3000P SI MIN CONCRETE	4.5"	4.5"	1/9	3X3.25	96"	60"	60	E.R.
			2/9	4X6X.25	180"	90"	60	E.R.
	2.5"	4.5"	3/9	4X8X.25	240"	90"	40	E.R.
3/8" POWERS STEEL DROPIN W/ 1-9/16" EMBED TO 3000 PSI MIN CONCRETE	4.5"	5.25"	1/9	3X3.25	84"	90"	120	NON E.R.
			2/9	4X6X.25	144"	90"	120	E.R.
	2.5"	5.25"	3/9	4X6X.25	168"	90"	60	E.R.
5/16" ITW TAPCON XL OR ELCO ULTRACON W/ 2-1/4" MIN. EMBED TO 3500 PS1 MIN. CONCRETE	5.0"	3.125"	1/9	3X3.25	84"	90"	120	NON E.R.
			2/9	3X3.25	96"	60"	60	E.R.

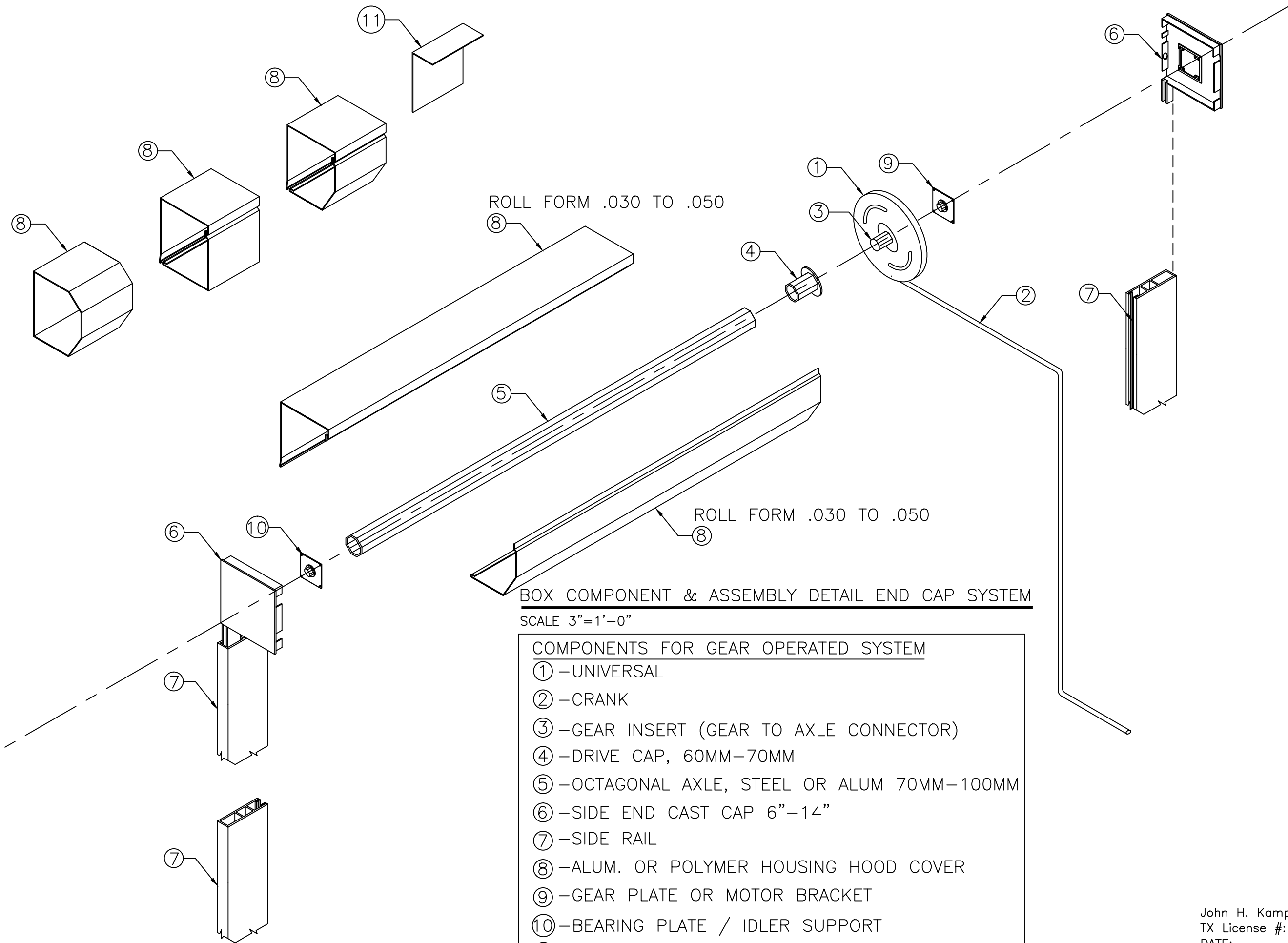
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 Phone: (941) 351-6700
 info@ultratek.com

TEXAS DEPARTMENT OF INSURANCE
 Description: **GREENTEK HYBRID ROLL-UP SHUTTER SYSTEM**
 Drawn: JK
 Project #: 21-14
 Scale: NOTED
 Date: 3/4/21
 Sheet No.: 9 of 11

John H. Kampmann Jr., PE
 TX License #: 108168
 DATE:



BOX COMPONENT & ASSEMBLY DETAIL END CAP SYSTEM
 SCALE 3"=1'-0"

- COMPONENTS FOR GEAR OPERATED SYSTEM**
- ① - UNIVERSAL
 - ② - CRANK
 - ③ - GEAR INSERT (GEAR TO AXLE CONNECTOR)
 - ④ - DRIVE CAP, 60MM-70MM
 - ⑤ - OCTAGONAL AXLE, STEEL OR ALUM 70MM-100MM
 - ⑥ - SIDE END CAST CAP 6"-14"
 - ⑦ - SIDE RAIL
 - ⑧ - ALUM. OR POLYMER HOUSING HOOD COVER
 - ⑨ - GEAR PLATE OR MOTOR BRACKET
 - ⑩ - BEARING PLATE / IDLER SUPPORT
 - ⑪ - STEEL BRACKET

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REV.	DESCRIPTION
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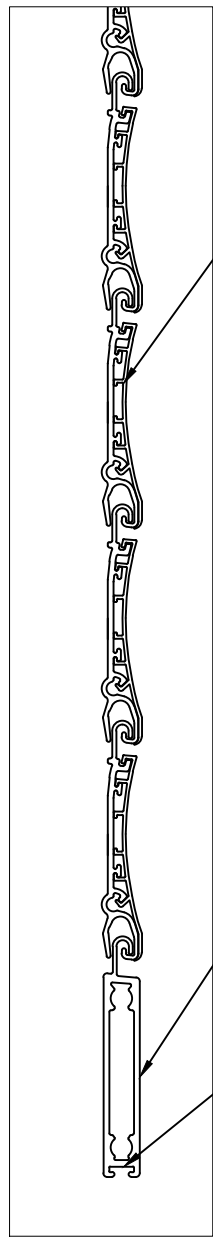
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Description:
**GREENTEK HYBRID
 ROLL-UP SHUTTER SYSTEM**

Drawn: JK
 Project #: 21-14
 Scale: NOTED
 Date: 3/4/21
 Sheet No.:

10 of 11

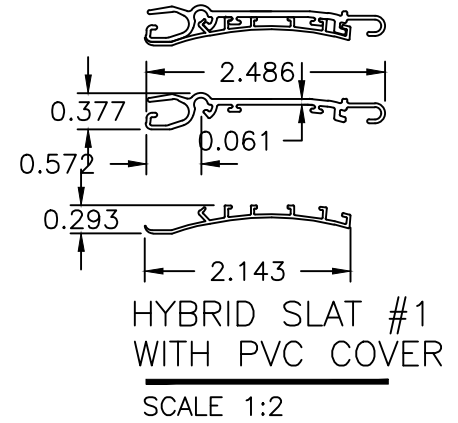


SLAT LAYOUT
SCALE 1:2

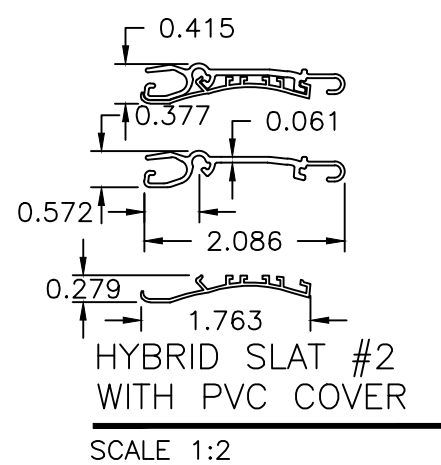
NOTE: SLAT #1 AND SLAT #2 ARE INTERCHANGABLE

BOTTOM SLAT IS OPTIONAL

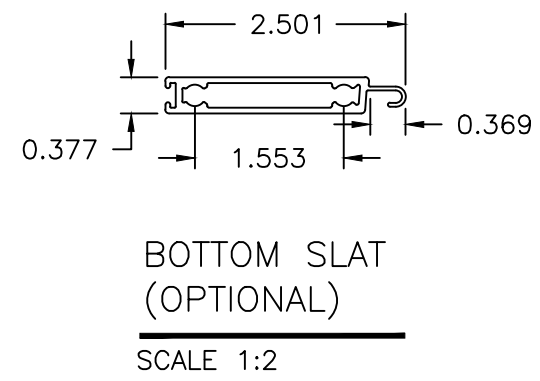
BUMPER #1 OR #2 OPTIONAL



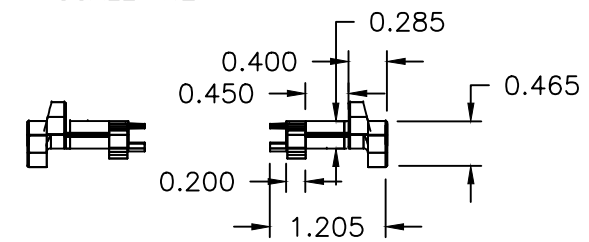
HYBRID SLAT #1 WITH PVC COVER
SCALE 1:2



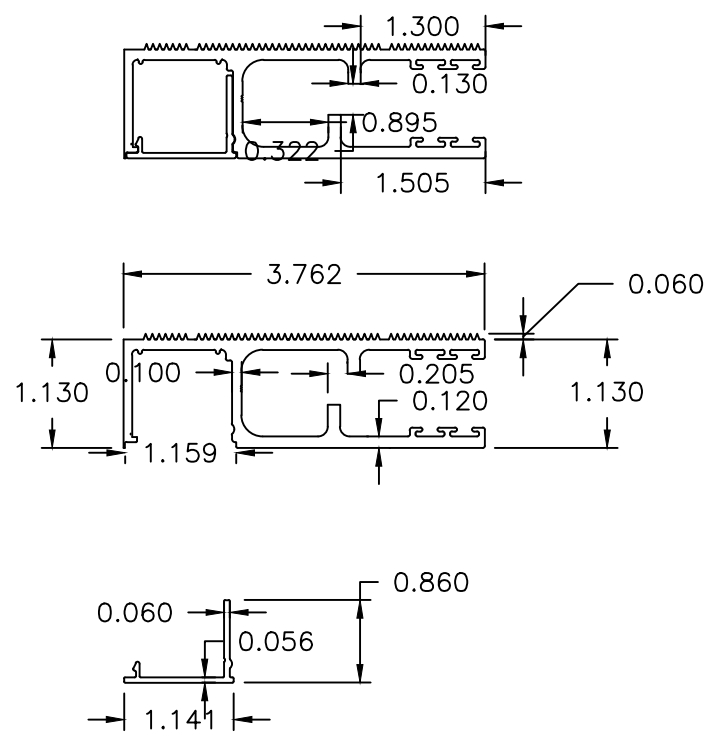
HYBRID SLAT #2 WITH PVC COVER
SCALE 1:2



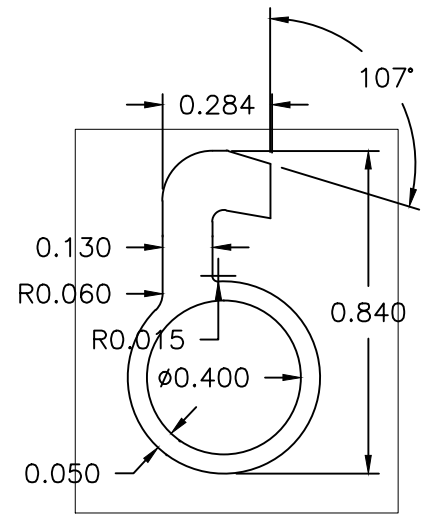
BOTTOM SLAT (OPTIONAL)
SCALE 1:2



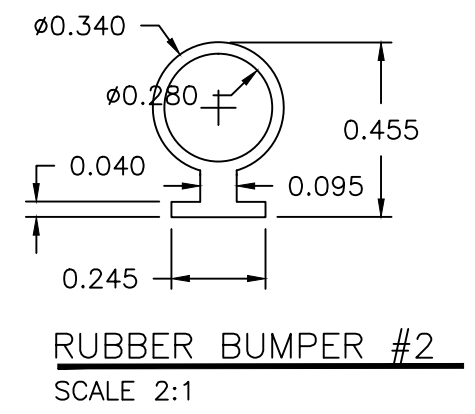
OFFSET END RETENTION CLIPS
SCALE 1:2



HYBRID SIDE RAIL WITH SECURITY SNAP CAP
SCALE 1:2



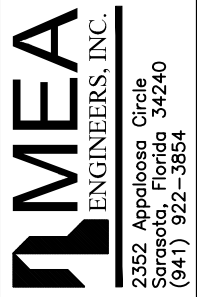
RUBBER BUMPER #1
SCALE 2:1



RUBBER BUMPER #2
SCALE 2:1

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